$1.95
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STARLOG presents

CineMagic ™

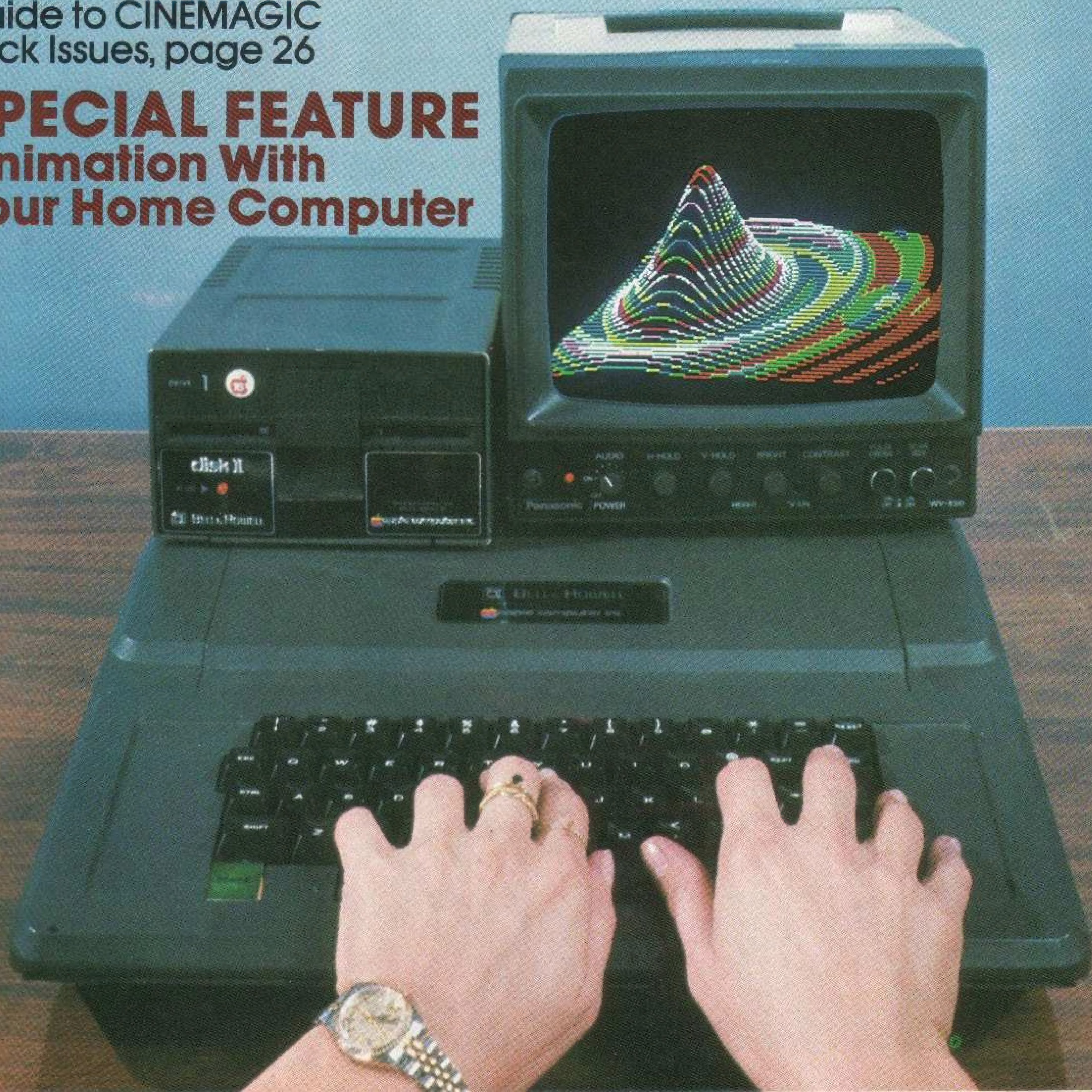### THE GUIDE TO FANTASTIC FILMMAKING

Number 23

"Zyzak Is King" — On Location With An Adventure Game Fantasy

Guide to CINEMAGIC Back Issues, page 26

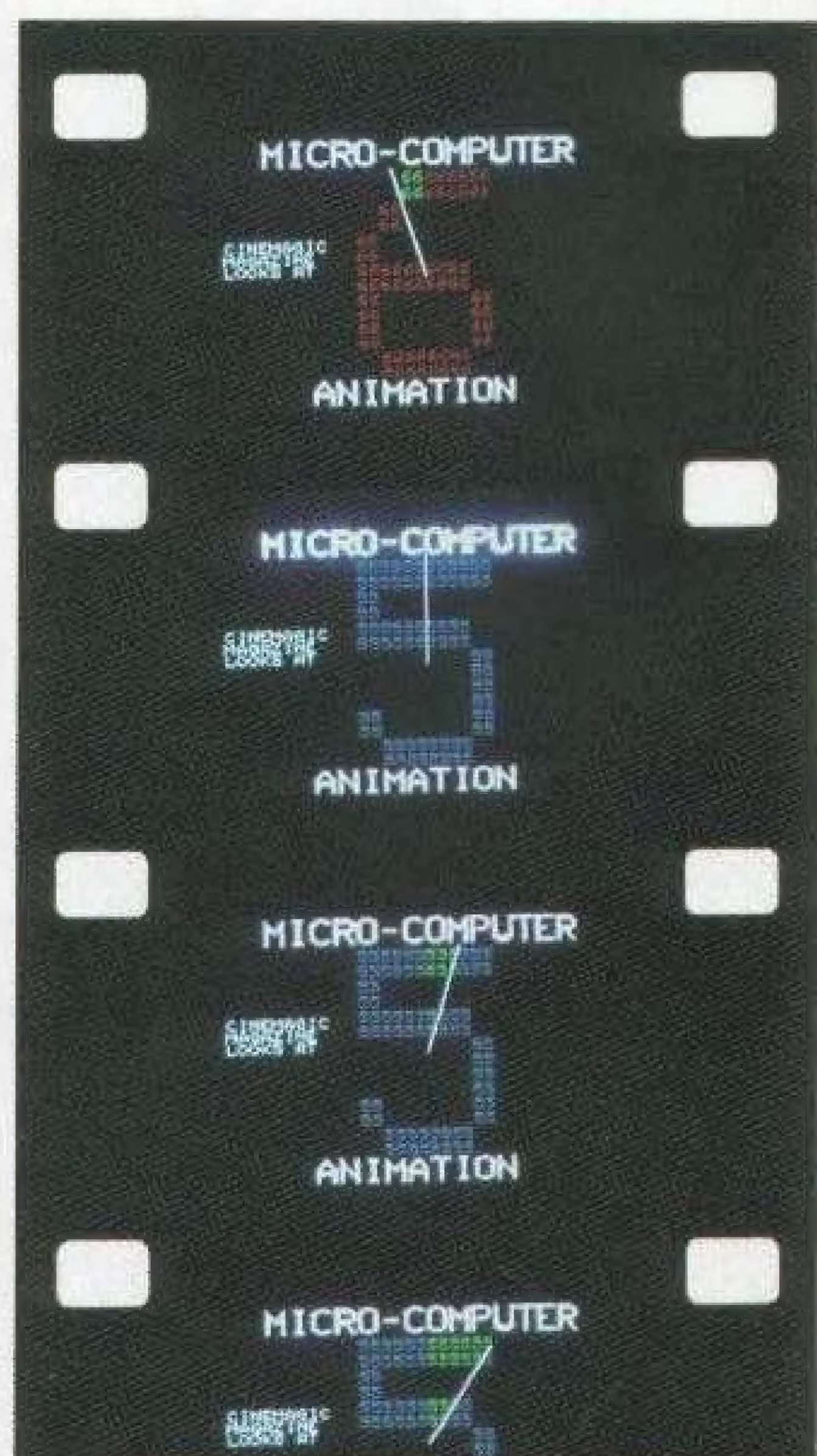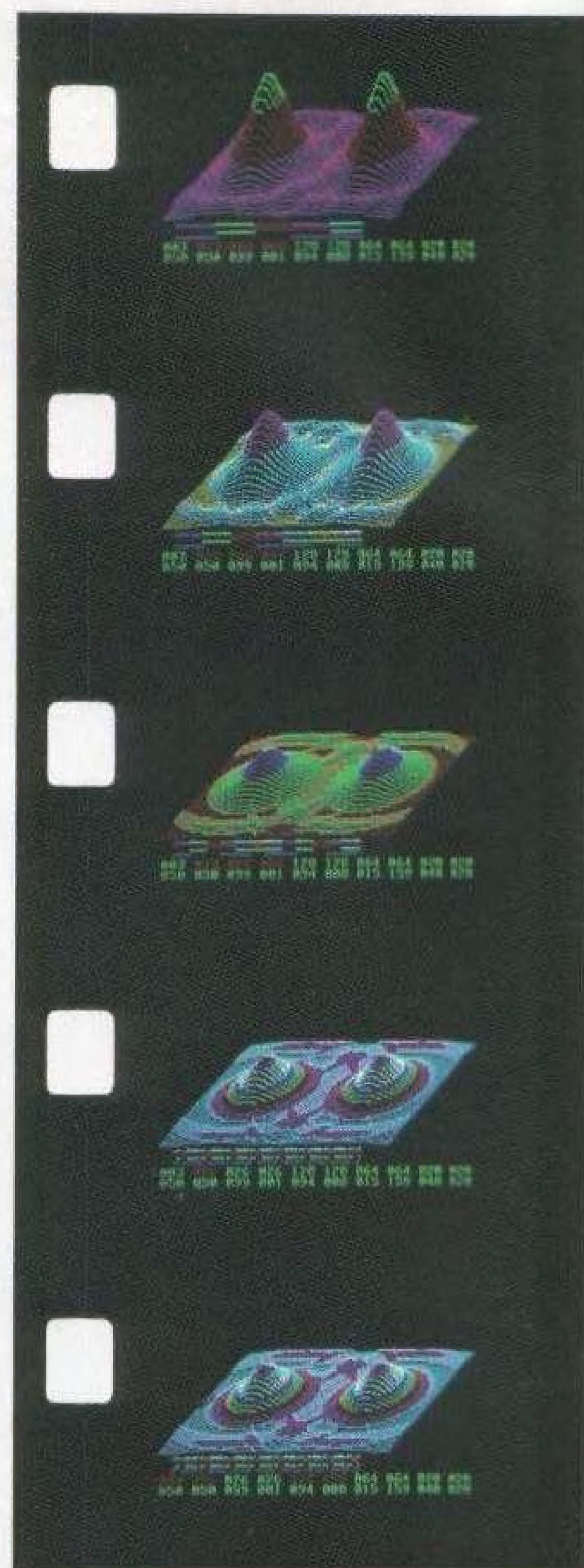## SPECIAL FEATURE
Animation With Your Home Computer

A CINEMAGIC Success Story: From Basement Filmmaker to Hollywood SFX Artist

Above: Imagine opening your refrigerator and seeing *this*. It's a *Deadly Spawn* cake and we hear it was delicious. See the Filmmakers' Forum section on page 12. **Below:** Carl Horner built this spaceship model for his Super-8 film, *Obelisk*, Carl is featured in a special Filmmakers' Forum reader page on page 14. **Right and Below Right:** Two examples of James Leatham's microcomputer animation that he creates with an Apple II. The top strip is Super-8 and the bottom strip is 16mm. Turn to page 6.
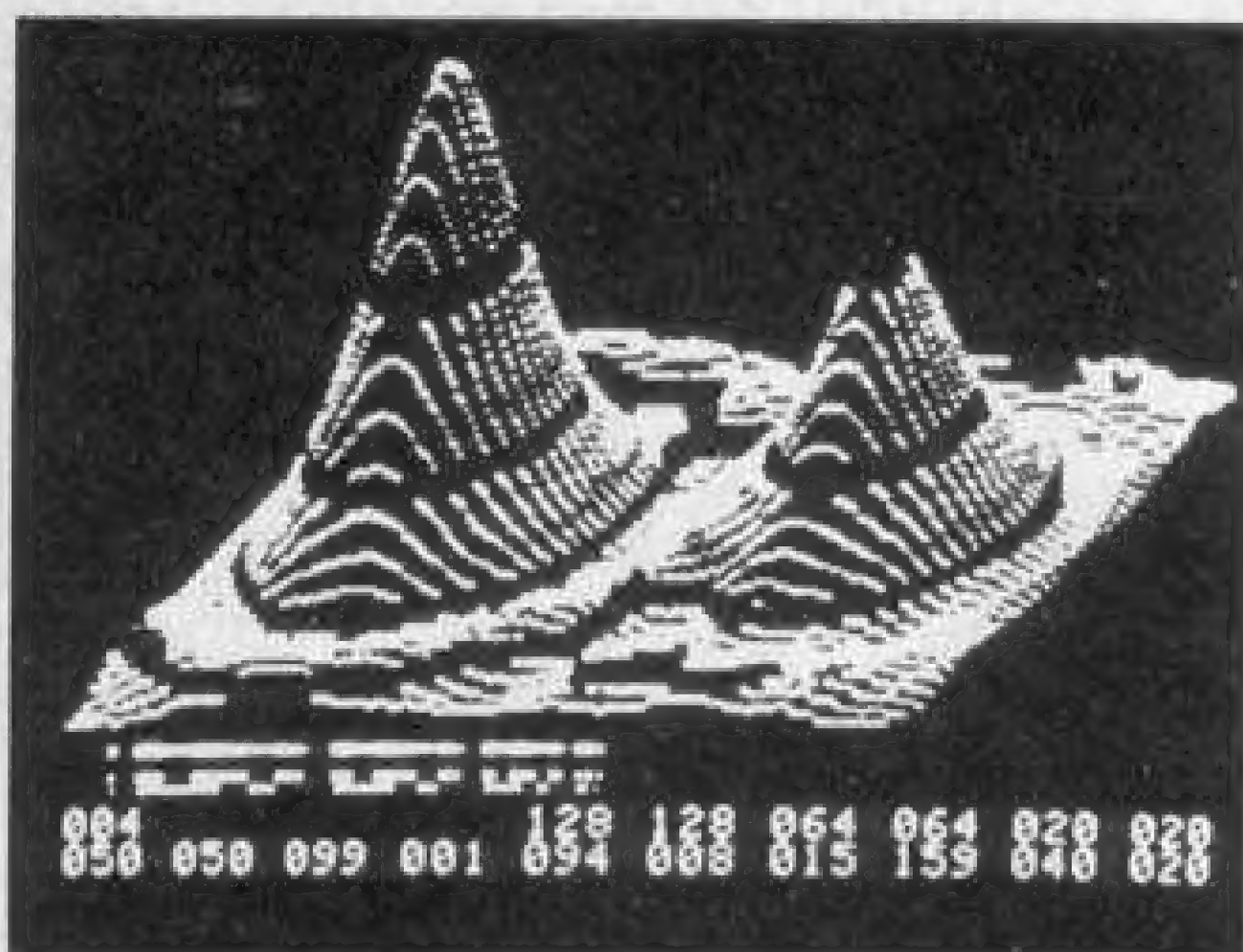
CONTENTS

Issue #23

About the cover: James Leatham's technique of producing incredible animation with a home microcomputer (an Apple II plus) is the subject of this issue's cover story. Shown on the cover is an Apple II plus special edition computer that has been modified by Bell and Howell. A frame of James Leatham's remarkable Apple-generated computer animation has been inset onto the computer's monitor screen. Monitor inset photo by James Leatham. Cover photo by John Clayton with special help from Douglas McAndrew, a great guy who helped us out in a pinch.

Editor's BENCH

Guest Editorial:

Lucky You!

When I was a kid, I would have *killed* to find a magazine like CINEMAGIC. I wanted to make movies more than anything else, and there was no publication to tell me how to do miniature sets, titles and cobwebs—no publication to put me in touch with other filmmakers in my area—no publication to teach me about scripts and storyboards.

Above all, there was no publication that sponsored a contest where I could strut my stuff. There was no Short Film Search.

Lucky you—you have a wonderful opportunity to learn from this magazine and then to put your learning into practice by making a film (or tape) that might be a prize winner.

By the time you read this we will have just staged the 5th Anniversary awards night for the Short Film Search (jointly sponsored by the School of Visual Arts), and it was a glittering event. Our Lincoln Center auditorium was packed to overflowing with both professionals and students. We screened all the winning films to a cheering audience, and we presented trophies and special prizes to the thrilled winners.

It was a magical night! Look for a complete report in the next issue.

If you were *not* there, you can still get in on the fun when some of the winning films are shown on *Night Flight*, Friday and Saturday, November 25th and 26th, beginning at 11:00 PM Eastern (8:00 PM Pacific) on USA Cable Network. *Night Flight* is a four-hour, fast-paced, youthful variety show and is the highest-rated cable series in the world. The exposure for our winning filmmakers will be sensational.

And if viewers respond positively, *Night Flight* will schedule regular CINEMAGIC segments for the future, and we'll supply them with past winners from the Short Film Search as well as other original films.

But that's not all—we are making definite plans to televise the entire awards night in 1984—the 6th year for this non-profit event. We'll show the world what kind of electricity is generated when fans and celebrities come together to discover, and honor, young talent on the way up. We'll show 'em the magic!

As a result, next year's winners will have a national showcase for their work that will give them an incredible career boost.

If you are an aspiring producer, director, writer, actor, cinematographer, special effects creator or interested in any branch of movies or TV, you owe it to yourself to start—*right now*—TODAY—planning and organizing a film production for next year's contest.

Don't try to make *Gone With The Wind*. Just do a little film that shows how clever and creative you are. Make it the best work you're capable of—in concept and in execution. This is your chance; *go for it!*

Then, maybe, just maybe, you'll be judged as one of the best films—and you'll have your work shown to an important audience at a big New York theater—and maybe one of the professionals in the audience will see it and say, "Hey, that kid has talent!" Sounds corny, but it could happen!

Still, you'll never know unless you put out the effort. Breaks like that don't happen to people who sit around and wait for the phone to ring. Get up off your butt and stop daydreaming!

When I was a kid, I would have *killed* to find a contest like this—an opportunity to show off my talent. If the Short Film Search had existed when I was in school, I might be directing films today.

Of course, that would mean that I never would have become a magazine publisher, and the CINEMAGIC Short Film Search wouldn't exist. I guess from *your* point of view it's a good thing there was no magazine like this for *me*. Lucky *you!*

Kerry O'Quinn/Publisher

MICROCOMPUTER ANIMATION

*Create dazzling computer animation
with a personal microcomputer*

By JAMES S. LEATHAM
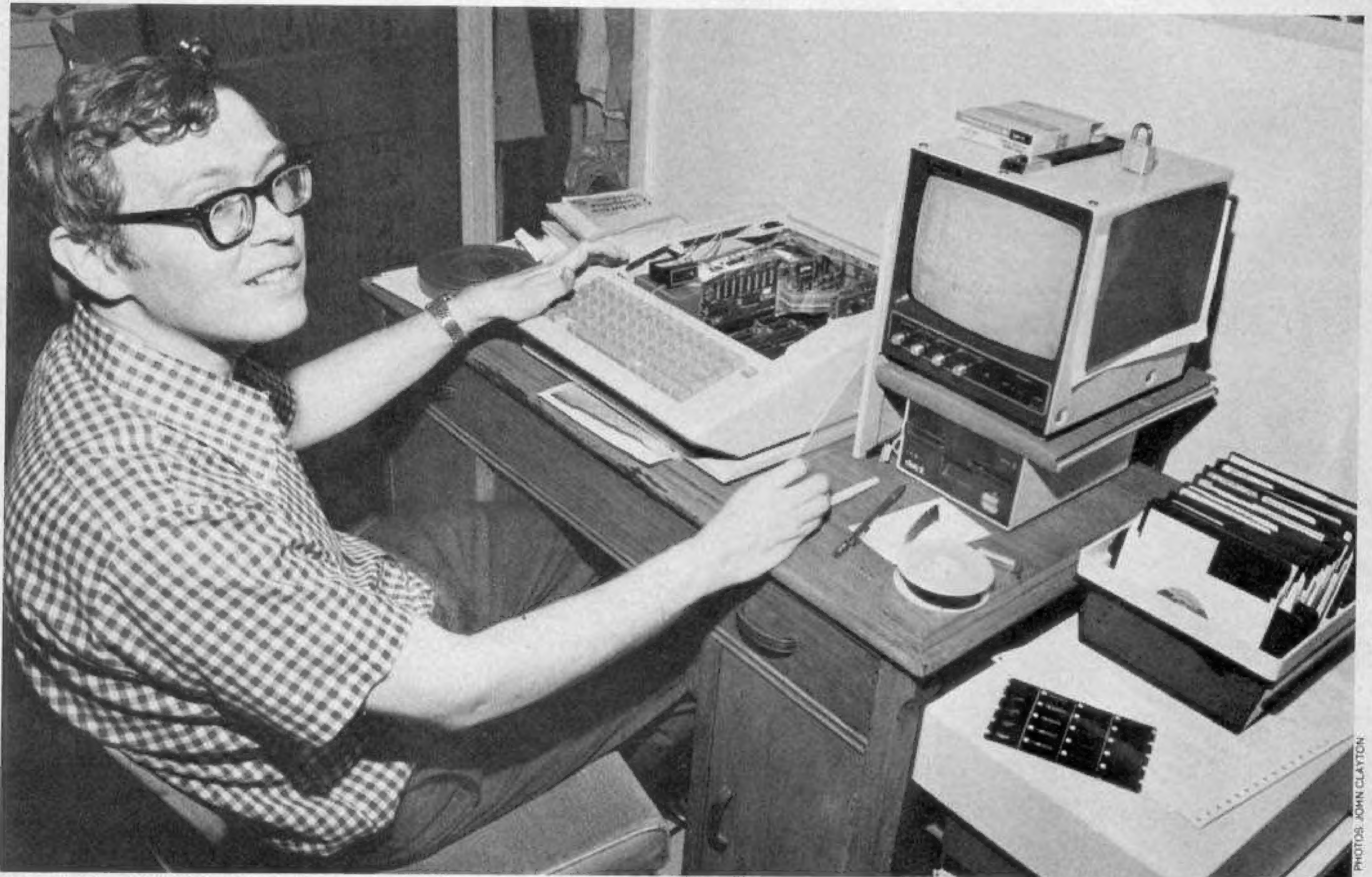
James Leatham with his Apple II plus home computer. The top is off to keep the computer from over-heating. The camera set-up and second monitor are in the closet.

Most people associate "computer animation" with Disney's *TRON,* the briefing room scene in *Star Wars* and the Voyager Saturn films. You CINEMAGIC readers have sharp eyes for new and unusual special effects and often want to find some way to incorporate them into your own films. Computer animation effects are no exception.

Sometimes even the set is a special effect. A common example is the computer display on a spacecraft's instrument panel. For the film *Asteroid* (see CINEMAGIC #16) I used my Apple II microcomputer and trick photography to make the "Paradox" logo, titles, credits and various instrument readouts. Most of what I've done is use a computer to "fake" computer displays! Those displays are actually rear-projected images on the sets suggesting a computer readout. A real computer and CRT (TV set or video monitor) wouldn't work as well as rear-

projection for several reasons. For one thing, the TV image is hard to photograph under movie lights—the picture is dim and operates at a different frame rate than the camera. The other problem is the computer. Any microcomputer can tell you the square root of 12 before you let go of the keyboard, but if you want to do anything complicated, like animation or picture displays, it needs time.

Time lapse photography can compress hours of computer time into mere seconds. We've all seen time lapse films of flowers bursting magically into bloom in seconds, the same principle can be used to "speed up" the length of time a computer needs to create each frame of animation for the camera.

Further more, the computer can take over the operation of the camera, automatically opening the shutter for exposure each time an image has been fully created on the computer's screen. After

drawing an image, a radar screen for example, the computer can operate the camera's shutter release, then start working on the next frame.

Shooting this way will also eliminate the "roll bar" or flicker that is normally associated with video images that have been filmed. Holding the camera's shutter open for a second or more "unflickers" the TV image and allows the use of fine grain Kodachrome film and color filters.

To understand how this works, let's call a film frame a "frame" and a video frame a "field." Unless the camera's shutter opens when the video field begins and closes when it ends, either more or less than one complete video field will be filmed. If one complete field and an incomplete field are photographed during one frame, part of the frame will be 100% brighter. If this situation continues, the photographed video screen will appear to flicker.

Professionals go to great lengths to synchronize their camera's shutter very precisely to avoid flicker. But most amateur Super-8 movie cameras do not have adjustable shutters. But by using comparatively long exposures, we can make the flicker effect completely unnoticeable.

If 100 complete fields and one incomplete field are photographed in a several second exposure, part of the frame will only be 1% brighter than the rest. The flicker is now imperceptible. So by using an exposure of a few seconds you don't have to synchronize the shutter to the video signal.

If the camera will allow the shutter to stay open for a minute or more, the computer can add color, without using a color TV—even if the computer can't display in color. Placing a green filter on the camera to film our radar screen example will make the display look more authentic. But you don't want a World War II radar screen in a 21st century space battle, so use more colors. Enemy blips can appear in red and the good guys in blue, for example.

The computer can position a red filter in front of the lens, draw the enemy blips, then erase them before changing filters and drawing the rest. Although it's more complicated than using a color computer and TV, the choice of colors, exposure control and increased resolution is worth the effort.

The favorite trick of the computer animator is to have the computer control the entire system. The program that draws the images to be photographed also controls the camera's shutter and moves color filters in front of the camera's lens. This way *you* plan what is to be filmed and the computer does the work.

HOW I DO IT

I always wanted a computer, so I was one of the first to purchase an Apple II. For years it had the best graphics and it has many features that make it a natural for computer animation.

It can display text (letters, numbers, etc.), graphics or graphics with subtitles. The computer's operation can be independent of the image being displayed. It can draw while showing text, print text while showing graphics or show one picture while drawing another.

Erasing one screen and using the other can act as a second camera shutter. The blank screen can be displayed while the computer is busy drawing a picture, when the color filters are being changed and when the camera is in the process of opening or closing its shutter. Electric-powered Super-8 cameras can open and close their shutters far faster than a motor driven 16mm Bolex can. A "wait for me to finish" signal is required for them or else errors will occur.

The computer is wired so that when it's in the graphics mode it produces a TV signal that shows the on/off state of a large chunk of its memory. (An Apple II has 8192 bytes.) When the computer draws anything, it's actually storing numbers.

My most complicated program tricks the computer into drawing several pictures at once outside the display memory area, then moving the "numbers" to where the camera can see them, exposing each image through a different filter.

The Apple II is also easy to interface (hook up to other things). In addition to
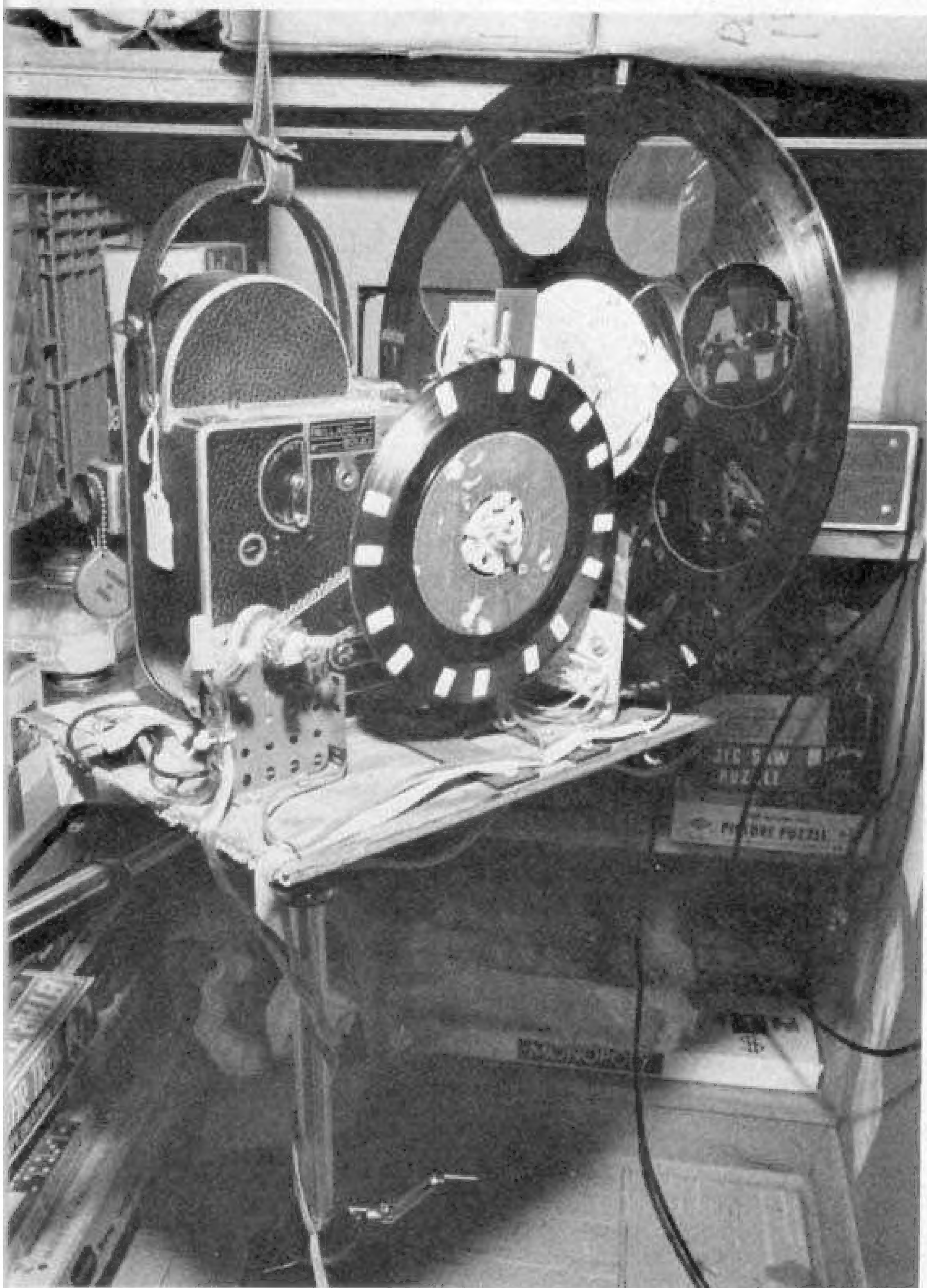

The camera set-up. The motor in the foreground in chain-drive to the 45rpm record is driven by an output signal and controls the camera's shutter motor. An input signal (cued by the stickers on the record) tells the computer when the camera is finished opening or closing its shutter. Other disk is the filter wheel.
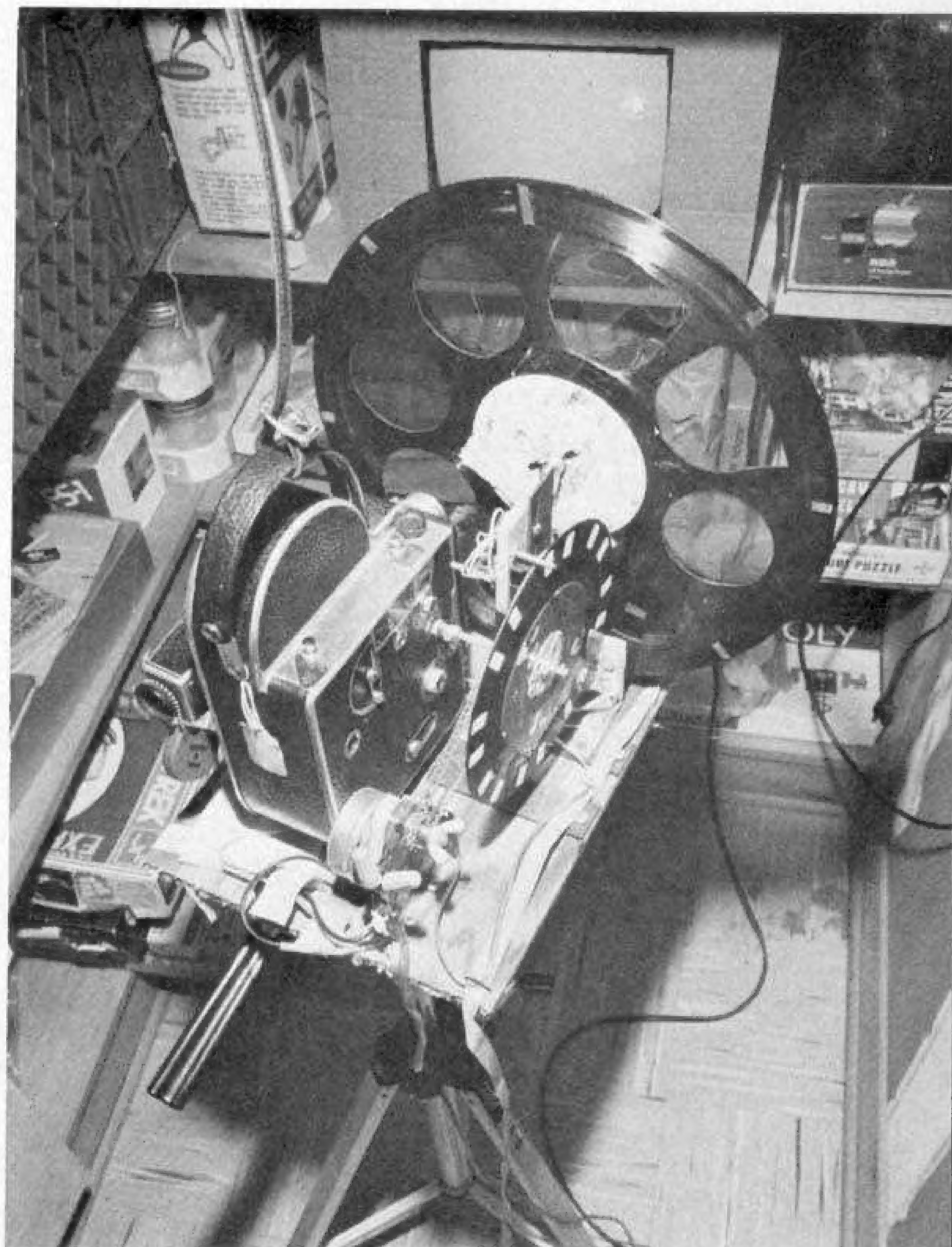

Another view shows the monitor that the camera shoots. The camera is turned away for photography purposes. The little reflective stickers on the large filter wheel (a cut-out 33rpm record) trigger an input signal that a filter is in place, turning off the output signal driving the motor and holding the wheel in place.
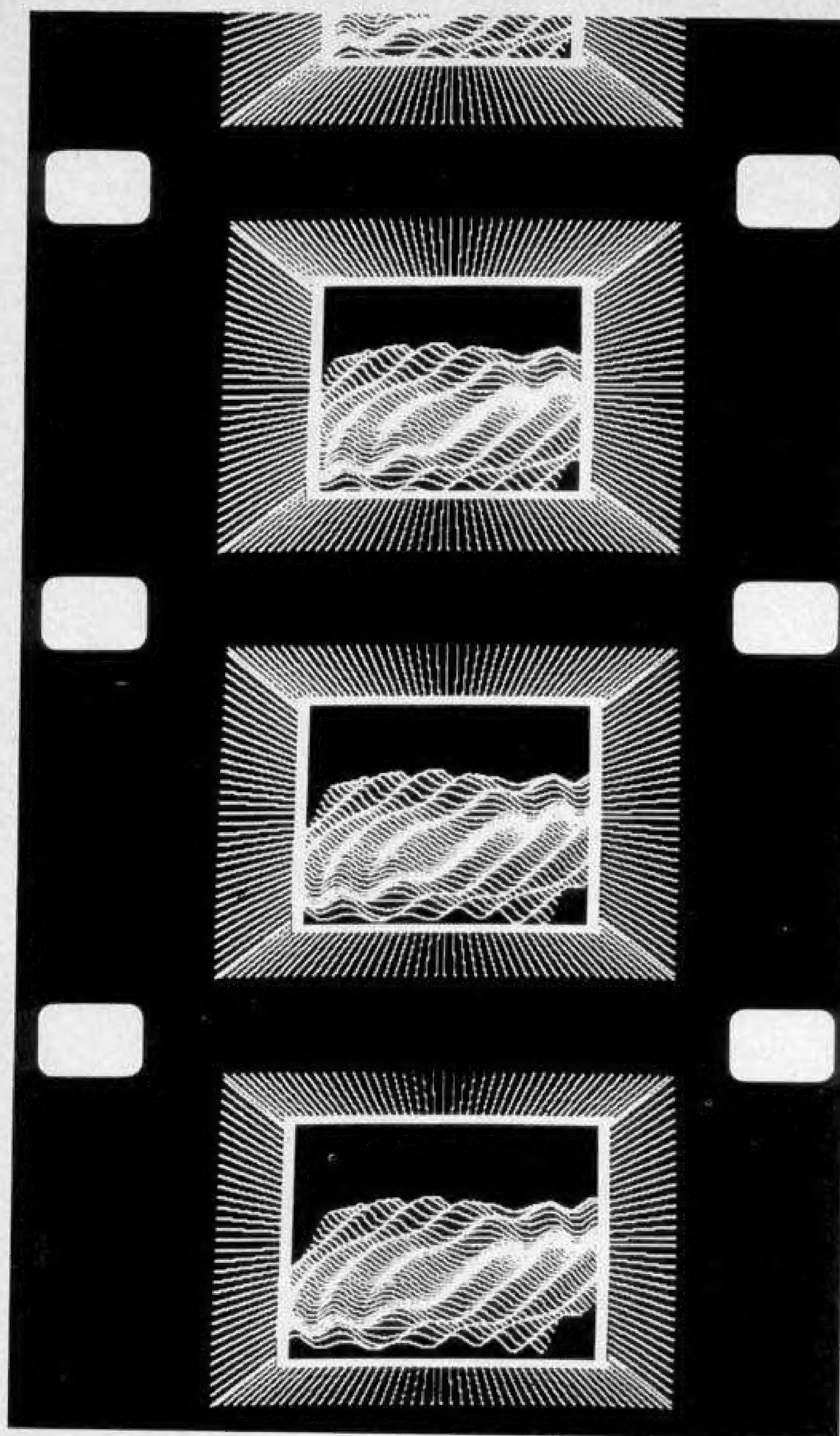
A 16mm sequence that seems to have depth. In color, it is all green.
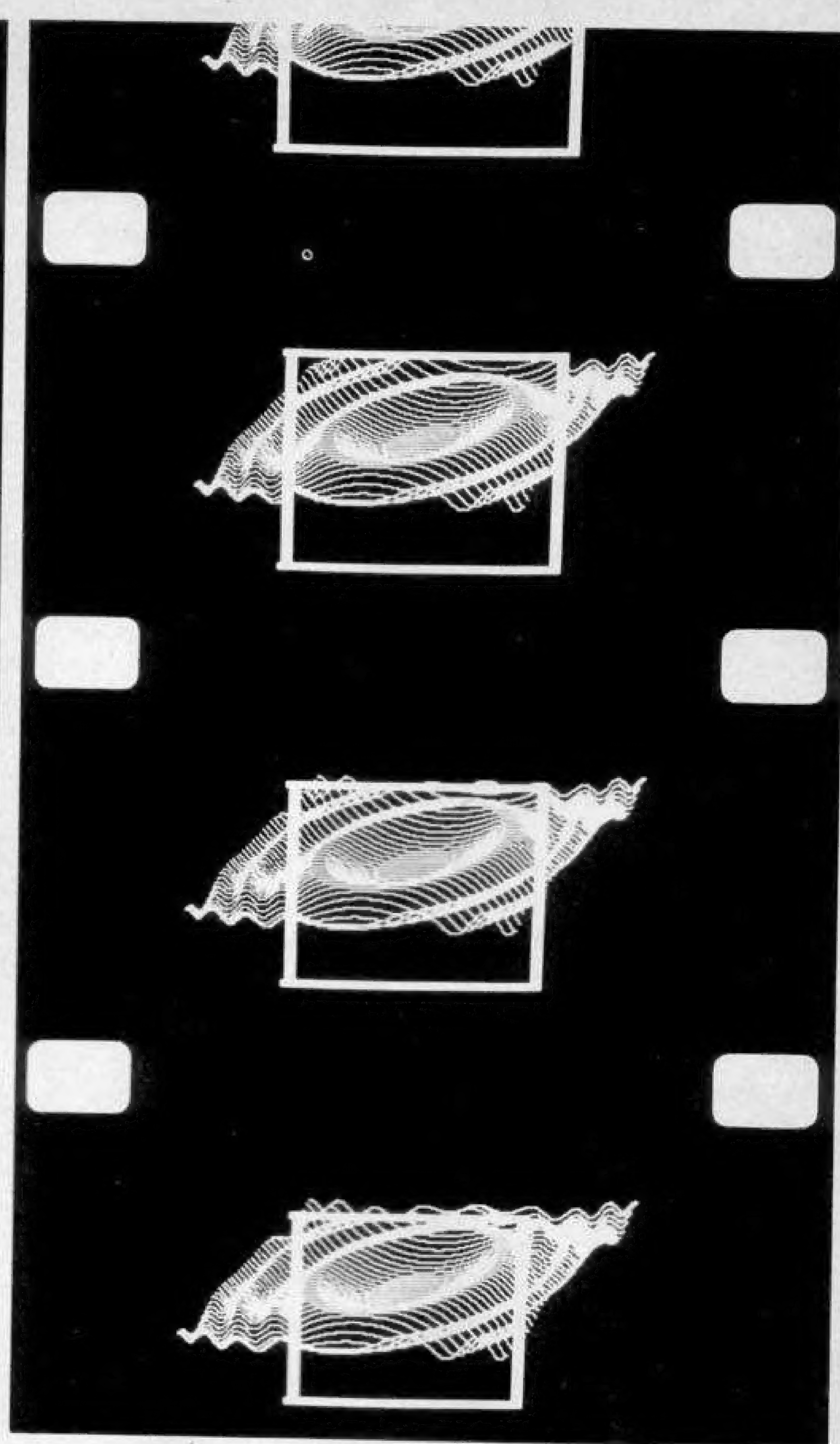
A 16mm sequence frame changes size and serves as a wipe for new graphics.

four potentiometer inputs, the game paddle connector can send four and receive three on/off signals. The output signals control the camera's shutter (on = open, off = close) and the color filter drive motor. The input signals tell the computer when the camera has finished opening or closing the shutter and when the color filters are in position. The signals have to be buffered (amplified) to be able to light an LED (light emitting diode) or can lead directly to other TTL (transistor/transistor logic, not "through the lens") circuits. Buffered signals can operate relays to control the camera and filter motors. A SSR (solid state relay) is an LED facing a photo electric switch. Not only does it keep house current a safe distance from the computer's circuits, it waits until the AC voltage crosses zero before turning on or off. This minimizes electronic noise that may confuse the computer.

Connecting the camera to the computer is another problem. For my Super-8 camera a small relay connected to the

remote socket opened the shutter, and an LED in front of the photocell closed it. (My camera was in the single-frame and time exposure mode for this to work.) The whole set-up must be in a completely dark room or else the ambient room light will cause the photocell to close the shutter. This is also necessary to prevent ambient light from creating reflections on the monitor screen. A few ICs (integrated circuits) handled the relay and LED timing instead of having the computer control each separately. Because many computer sequences take over 12 hours to film, I also had to build a 9-volt DC power supply for the camera.

The 16mm version uses a small 4-rpm AC motor to turn the handcrank spindle. An improbable arrangement of phonograph records, reflective stickers, photodetectors, LEDs and several ICs start and stop the motor at the points where the shutter is fully open or completely closed.

In each case, a 4-rpm motor turned a color filter wheel. I used an ordinary 12-inch LP record (that I didn't want to

play anymore), cut eight two-and-a-half-inch holes in it and taped three-inch square gelatine filters over the holes. I used six filters: red, green, blue (the additive primaries), and cyan, yellow and magenta (the subtractive primaries). One hole was used as "no filter," and the eighth hole was not used. Reflective stickers were placed on the circumference of the wheel, so that when a filter was in position, the "color" photodetector saw a sticker. A sticker at a slightly different radius from the rest represented "reset." When the "no-color" photodetector sees this sticker, one of the open holes is in front of the lens. The computer positions any filter in front of the camera's lens by turning the wheel motor on and off. To select green (color #3) the computer turns on the wheel motor and waits for the "no-color" signal. Once it gets it, it counts "color" signals until the number it has matches the color number it wants, then it turns off the motor. To save time, the programs always select the colors in sequence.

Although it sounds complicated, the

section of the program that selects filters is fairly simple. The main reason I chose this method is that it requires only one output and two input lines.

While I am discussing the computer-controlled motors, let me explain why I avoided using "stepper motors." Stepper motors are made to be computer controlled. (There is at least one in every disk drive and printer.) They work like a compass surrounded by electromagnets. The sequences the magnets are turned on and off in determines which direction it will turn. The computer can make the motor go fast or slow just by changing the speed the magnets are turned off and on. I didn't want to use stepper motors because: the computer has to be directly involved with each fraction of a revolution; they require four control lines; they are expensive; they are hard to interface to the computer and I didn't need them for the job.

THE PROGRAMS

The photographs should make the equipment look simple. It is. the complicated part is the computer and the programs in the computer. The program tells the computer what to do and how to do it. The computer will follow these instructions to the best of its ability, no matter how stupid they are.

I program in Basic, the language that comes with the computer. Recently I changed to a faster version called CCSOFT. This language does everything the Apple Basic does, but it's faster, because it uses an "Arithmetic Processor Unit." It's a calculator that plugs into the computer and performs tough math functions like division. When Basic isn't fast enough, I use "machine language." This is the language the computer's CPU (Central Processing Unit) understands. Its much faster than BASIC, but much harder to write. The machine language program is controlled by the Basic program. After the Basic program sets things up, the machine language program does its job then returns control to the Basic program. The Basic program then handles the photography of the result and proceeds to the next frame.

The two twin peak animation displays (colors Bessel figures) have a program which uses Basic, machine language, and the APU to perform 300,000 calculations in one minute. That's five to 15 times faster than Basic alone. It took a long time to get the machine language section to work properly. A very long time. But now that it is working, it's easy to change the Basic program that controls it.

THE LIMITATIONS

The Apple II can't match the resolution of the system used to make *TRON*. The 280 dots wide by 192 dots high display is about a quarter of what was used for the Voyager films. Further, each pixel (dot) can only be completely on or entirely off. I have to rely on varying the exposure times and multiple exposures to give graduations of intensity.

The other problem is caused by the way the picture is formed. On arcade games like *Star Castle* a straight line can be drawn between any two points. The Apple II can only draw lines by turning on the pixels that are arranged like the squares on graph paper. Take a sheet of graph paper, select any two squares a few inches apart and using a ruler draw a line between them. Now fill in every square that the line touched. Except for special cases, the line is jagged, "stairsteppy", because
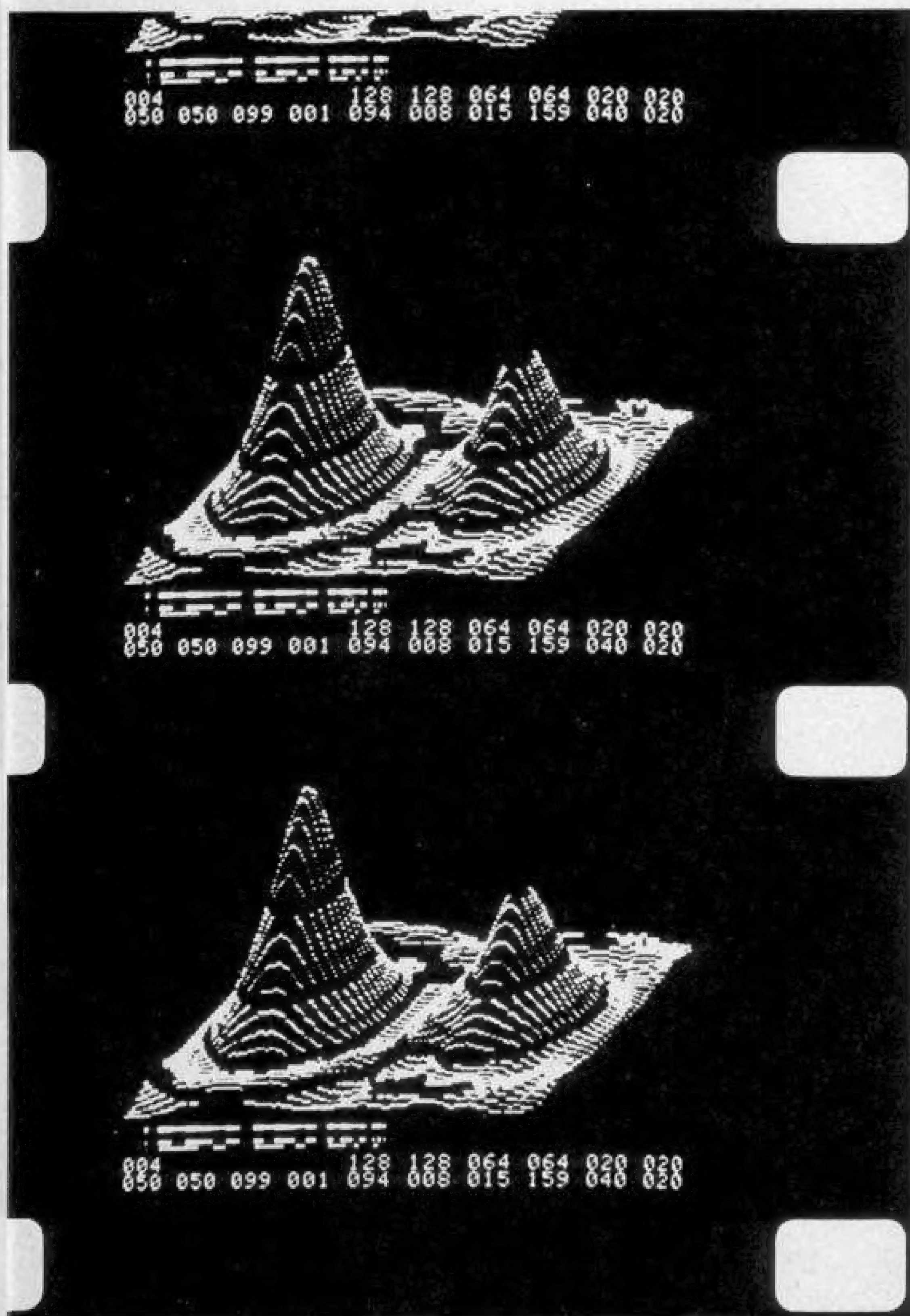
A 16mm sequence of two very colorful, collapsible Bessel figures.
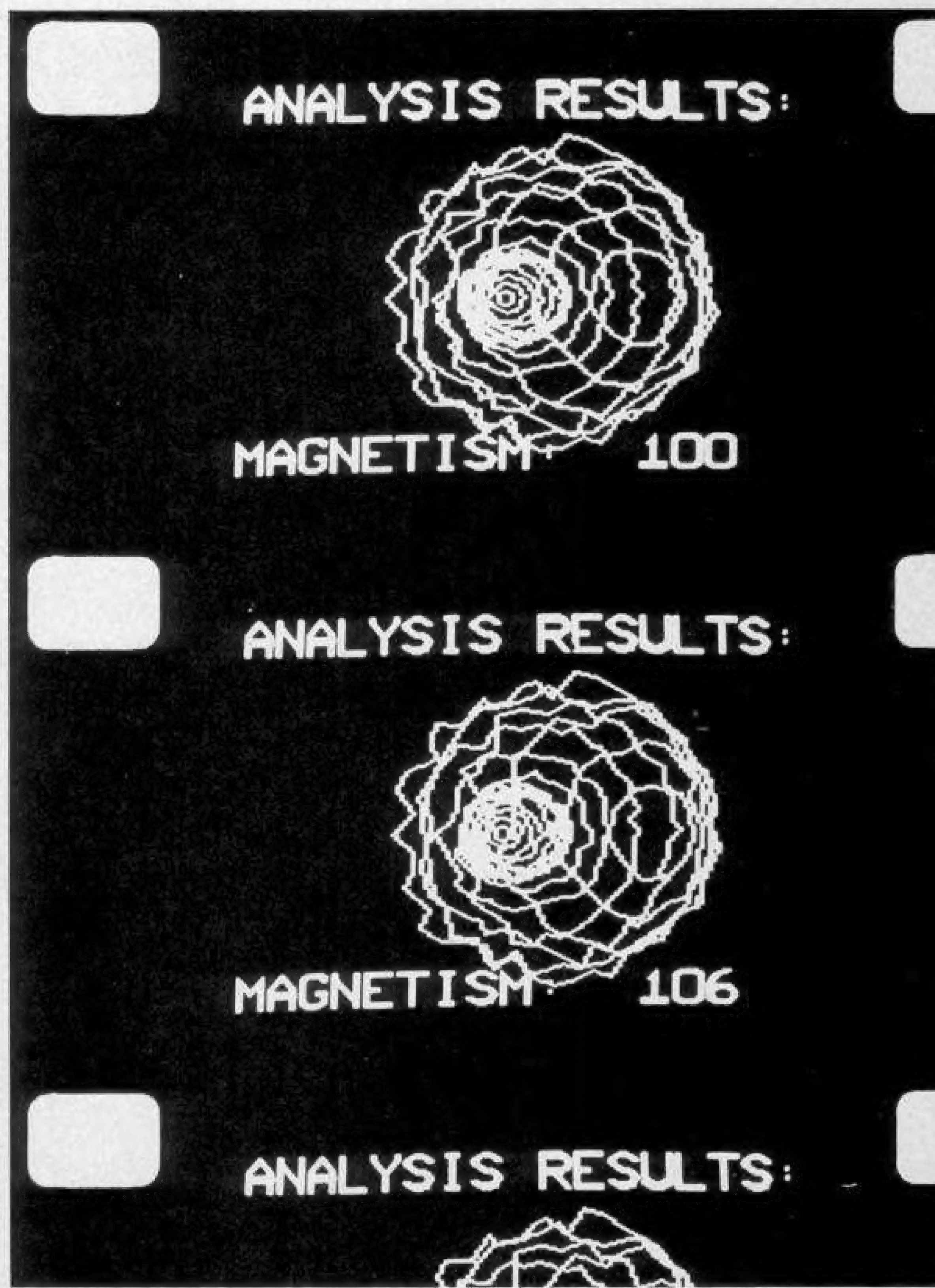
A 16mm version, originally Super-8. Programs can be run countless times.

you can't split pixels.

Sometimes this effect can be minimized because of a quirk in the method the computer uses to calculate lines. By drawing from point A to point B and then from point B to point A, the computer may make the line wider and the staircasing less noticeable.

Because the picture is a series of numbers in the computer's memory, the picture can be saved on a disk and returned to the computer's memory at any time. To speed up the end credits for *Asteroid*, I stored the images on a disk, had the computer recall the image outside the display area, and move the picture a section at a time to where the camera could see it. This process replaced the previous image being displayed resulting in an interesting "venetian blind wipe", because of the odd way the Apple's display memory is arranged.

THE EQUIPMENT

Select your camera with care. Sound cameras may not offer both single frame and time exposure features. A through-the-lens viewfinder will allow proper framing and focusing. Be sure it can focus on the nine or twelve-inch monitor. A camera with an electric remote release will make it easy to interface with the computer. (The Eumig 881 PMA is a silent Super-8 camera with these features, *and* it accepts sound film cartridges.)

Some computers come with a monitor. Usually it's possible to connect a second monitor. You should have one monitor for the operator, and another in a light proof enclosure with the camera. Many video monitors for computer use are tinted green. You may have to hunt around or special order a monitor with white phosphors. (Try the monitors used for closed circuit TV, but be sure it has an adjustable focus.)

I use an Apple microcomputer because of its features. Other computers may be cheaper, but may not be suitable for your needs. There is no limit to the amount of money you can spend on peripherals (accessories). Don't buy stuff you don't need and can't afford.

I've recently purchased an Apple IIe. I had to make minor changes to my equipment and programs, but now I have a new computer with the capability (but not yet the ability) to double the horizontal resolution to 560 pixels.

THE ADVANTAGES

If you need copies of your computer-animated films and don't want an expensive second generation dupe, just tell the computer to do it again. The programs can be run several times to get the right exposure, color and speed.

Because I do the programming and the computer does the filming, films can be made anytime. That's what Steve Parady meant in the *Asteroid* article. I don't *have* to take a nap during the animation process, it just works out that way.

For the *Asteroid* end credits, I made one wide screen version for SF convention showings and a narrower version for videotape. The same program was used for each, but to make the narrower version I used a screwdriver to change the monitor's width control. Try *that* with rub-on letters!

If you are fascinated with this technique of microcomputer animation, but need further information about the specifics involved, send a S.A.S.E. with your questions and I'll try to get back to you as quickly as I can. Send inquiries to: James Leatham, RD 2, Box 198, Laroe Rd., Chester, NY 10918. Good filming! ∩W
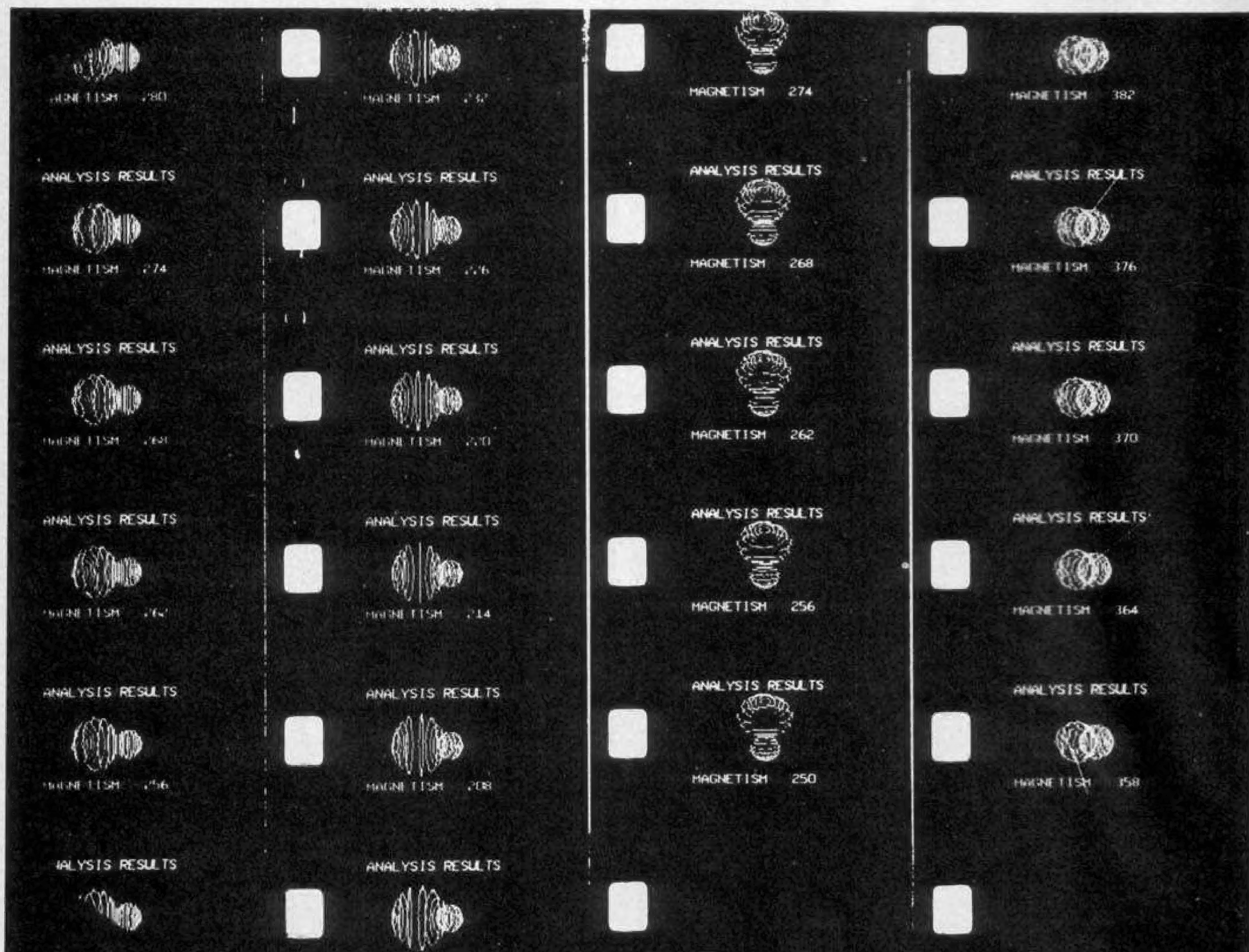
A Super-8 computer animation sequence made for the film *Asteroid* (see CINEMAGIC #16.) The sequence was used as a cockpit computer read-out, showing the computer's analysis of the mineral content of an asteroid. It appears in the film as a real-time computer rotation of the oddly-shaped celestial body. It took hours to shoot.

Filmmakers'
FORUM

A regular department devoted to readers' comments about filmmaking, their problems and solutions.

Miniature Planets

. . . For those of you who need realistic planets for your next space adventure, here is a cheap and very realistic way of creating them. First, if you have seen pictures of the Earth taken from space you will notice that it seems to give off an intense inner glow. To recreate this effect, buy a globe light fixture cover. Lighting stores carry them in varying sizes from one inch in diameter to 20 inches and the cost range is between about $1 to $25. Airbrush a light coating of paint on the globe in the pattern you wish the planet to be. Next, insert a light bulb through the opening and you will immediately see the great results. If you want the planet to rotate simply mount the globe on a lazy susan. Also if there are any readers in the Santa Barbara area who are interested in or make science fiction and horror films please write me and maybe we can collaborate on a project or exchange information and ideas.

    Kurt Hanson
    1621 Castillo – 1
    Santa Barbara, Ca. 93101

Tasty Spawns

. . . The cake in the above photo may have a familiar appearance to CINEMAGIC readers. It's a deadly spawn cake made by Canadian makeup artist Marlene Stoller, with some assistance from her friend Kim Vegliante and a fair amount of kibitzing from myself (they made me carve most of the teeth!)

    The occasion was makeup artist (*The Deadly Spawn*) Arnold Gargiulo's birthday. Believe it or not, the cake was completely edible (teeth were made of white chocolate and candy corn) and quite tasty! Arnold's birthday coincided with the premiere of *The Deadly Spawn*, so we had to do something.

    Al Magliochetti
    150 Thompson St.
    Hamden, CT 06518
. . . See Arnold Gargiulo's makeup work in CINEMAGIC #17, "Secrets of Graphic Gore"; CINEMAGIC #20, "Masks That Move"; and in FANGORIA #22,

"A New Face of Fright". See Al Magliochetti's work in the Profile in CINEMAGIC #18 and his article about frontlight/backlight animation in CINEMAGIC #19. Also see CINEMAGIC #18 for John Dods's article on the making of the spawns themselves.

Norwescon Film Contest

. . . NORWESCON 7, Seattle's own regional science fiction convention (held March 22-25, 1984) is having its second annual amateur film contest. Entries should be 8mm silent, Super-8 silent or sound (1 or 2 track), 16mm optical sound or VHS video. Films should not be more than 30 minutes in length. Entries should be sent in a reusable carton (marked distinctly on the box, film can and leader) and be insured, if possible. All filmmakers not attending the convention must pay a $5 entry fee to cover costs. NORWESCON and film contest personnel are not responsible for lost, stolen, or damaged properties. No entries from last year's contest may participate. If you would like more information about the contest or to enter your film (deadline March 1, 1984) send a S.A.S.E. to the address below.

    NWC/Film Contest
    P.O. Box 24207
    Seattle, WA 98124

Contact Filmmakers!

. . . You can contact filmmakers whose work interests you or who happen to live in your area, simply by writing to them at the addresses listed with their letters. CINEMAGIC encourages filmmakers to contact each other and possibly collaborate on projects. For more names and addresses, see Producers' Bulletin Board page 24.

New Jersey Film Casting

. . . I am making a fantasy film with some friends and we could use some help from interested filmmmakers in the New Jersey, New York metropolitan area. The name of the film is *Beware the Huntress*, and it will be shot in Super-8, featuring prosthetic makeup that makes the characters look half human, half lion. We need actors and people to work on sets and help film. If you live in the area and are interested, please contact me. The film will be about 45 minutes long and is the first story in a trilogy. One location will be a local castle.

    Arthur Cox
    115 Lewis St.
    Patterson, NJ 07501
    (201) 523-6511

Flushing Film Club

. . . I am a filmmaker who lives in the Flushing, Bayside area of Queens, New York. I do makeup effects and make movies. Besides myself, I have only one friend who helps me on my film projects. If there are any other filmmakers in the Queens area of New York City who would like to get involved in a collaborative filmmaking effort, please write to me at the address below.

    Chivalry Productions
    c/o Vincent Schicchi
    29-27 168th St.
    Flushing, NY 11358

Tasty Spawns

CINEMAGIC
Writer's Guide

. . . The CINEMAGIC Writer's Guide is now available. If you have an article in mind for CINEMAGIC and would like to know what we expect to see from our writers, send a self-addressed, stamped envelope (business #10 size) to the address below.

CINEMAGIC Writer's Guide
475 Park Ave. So.
New York, NY 10016

Rust Effects

. . . I have found an easy way to quickly give props a "corroded" look with fake "rust". All you need is plastic model glue, tea bags and rust-colored paint. First, with a brush or your fingers, spread an even coat of model glue on the surface where you want the "rust". Before it dries, sprinkle the crushed tea leaves you find inside a tea bag onto the glue. Let it sit until the glue hardens, then brush rust-colored paint over the tea. Leave some of the tea unpainted to give the "rust" a varied color. This "rust" can be peeled off of painted and unpainted metal surfaces without leaving a trace as long as your use only *plastic* model glue and not epoxys or resins.

Steve Bydal
2912 Jaffe Rd.
Wilmington, DE 19808

Address all correspondence to: CINEMAGIC—Filmmakers' Forum, c/o O'Quinn Studios, Inc., 475 Park Ave. So., New York, NY 10016

Due to the enormous volume of mail received, the editor regrets individual replies are impossible.

Rust Effects

CineMagic
MARKETPLACE

Reader's Page

...My name is Carl E. Horner and I have been reading CINEMAGIC since it became a STARLOG publication. And I think it is an excellent publication to "grow-up" with. The articles that focus on the talented, young filmmakers are of special interest to me, and just the other day the realization hit me that I could be one of those young men who are featured in the pages of CINEMAGIC.

No, I'm not losing my mind. (At least I don't think so!) The following is a list of some of my achievements as a young filmmaker.

I am the first student ever (at the age of 17) to receive a scholarship for cinematography from Point Park College and Pittsburg Filmmakers, Inc.

Michael Gornick, Director of Photography for George Romero, has viewed my film, *Obelisk*. Mr. Gornick liked *Obelisk* and set up a viewing of it for Rick Catizone, of Anivision fame. [Rick Catizone talks about the technique of replacement animation, "Making Stop-Motion Models Talk," in CINEMAGIC #11.] I am now Rick's apprentice.

I was offered a job by Harwick /Przyborski Productions, based on my work in *Obelisk*. Hartwick /Przyborski Productions is a production house that does major national commercials, industrial films, and many other things. *Obelisk* is a Super-8 film with a running time of 16 minutes that took one-and-a-half years to make, with a budget of $3,000.

I am currently finishing my first 16mm production, entitled *My War*. I hope to enter it in the Student Film Competition sponsored by the Academy of Motion Picture Arts and Sciences.

I am also a professional model and actor. I have done local and national commercials, fashion modeling, and Industrial print work. There has been some interest in me for feature film work. There's more, but I won't bore you. Rick Catizone suggested I send you a brief outline of my budding film career.

Carl E. Horner
Box 124
411 Beaver St., Mars, PA
16046
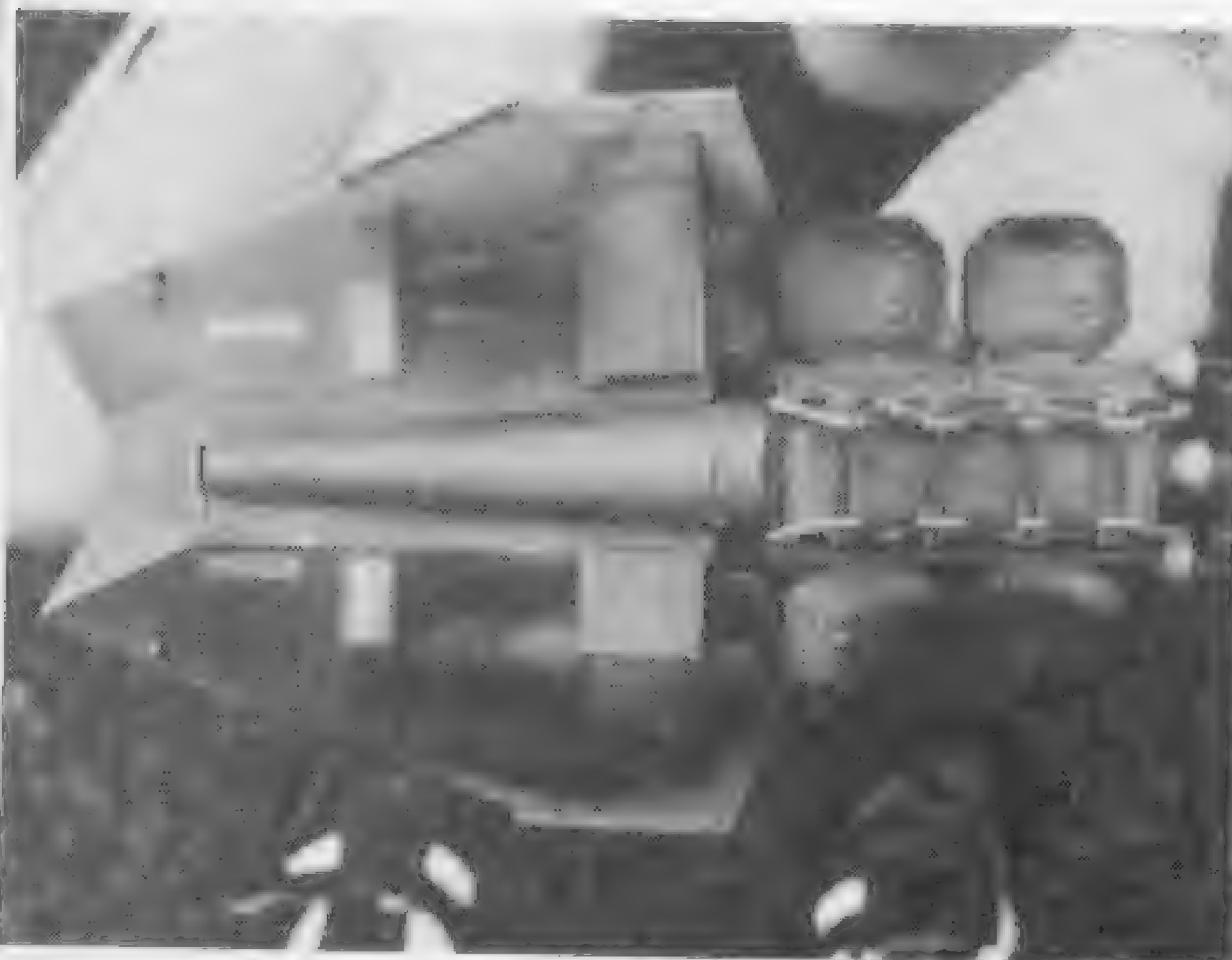
The protagonist's spaceship in *Obelisk*, a Super-8 film that cost $3,000 and was 1½ years in the making. Based on my *Obelisk* work, I was offered a job.

A radio-controlled miniature M-1 tank on the bunker set for a scene in *Obelisk*. The filming employed use of miniatures, miniature sets, and explosions.

An automatic defense system seen in *Obelisk*. Included in the set is a miniature lake. This photo was taken part-way through the construction of the miniature set.

A foreground miniature of the White House, rigged for miniature explosions and a moving spaceship, for a scene in *Obelisk*. It was rather effective in the film.

Starbursts

Make your own cross-star filter and create striking starburst effects

By JACK IMES, JR.

A "star point" effect is a great way to add visual energy to an ordinary shot. Unlike many other kinds of optical effects, the star point (also called a star burst) is easily done at the time of the original photography using a special filter. A professional "star filter" is basically a sheet of optically flat glass or plastic engraved with a pattern of tiny lines. The spacings between the lines and the grid pattern determine what kind of star point will be formed. The "E-Z Effects Star Filter" is based on the same idea and can introduce you to the "sparkle" effect. As shown in the photo, the results can be quite dramatic with bright streamers and rays shooting from every highlight. The star filter is most effective on glass, chrome, and other shiny, highly reflective surfaces.

Before you make the filter itself, you need to make a paper filter holder and the filter lens mount to attach the filter to the camera. The methods for constructing these two items are shown in the following steps.

THE FILTER HOLDER

Step 1: Purchase an Ambico Adapter Ring matched to your camera lens filter thread size. This plastic ring, available at most camera stores, greatly simplifies the mounting of the star filter. It will also be used on all other E-Z Effects Filters in future issues. It costs about $2.50. The

FIGURE 2

A   B   C   D

FIGURE 3

A   B   C

FIGURE 1

A

B
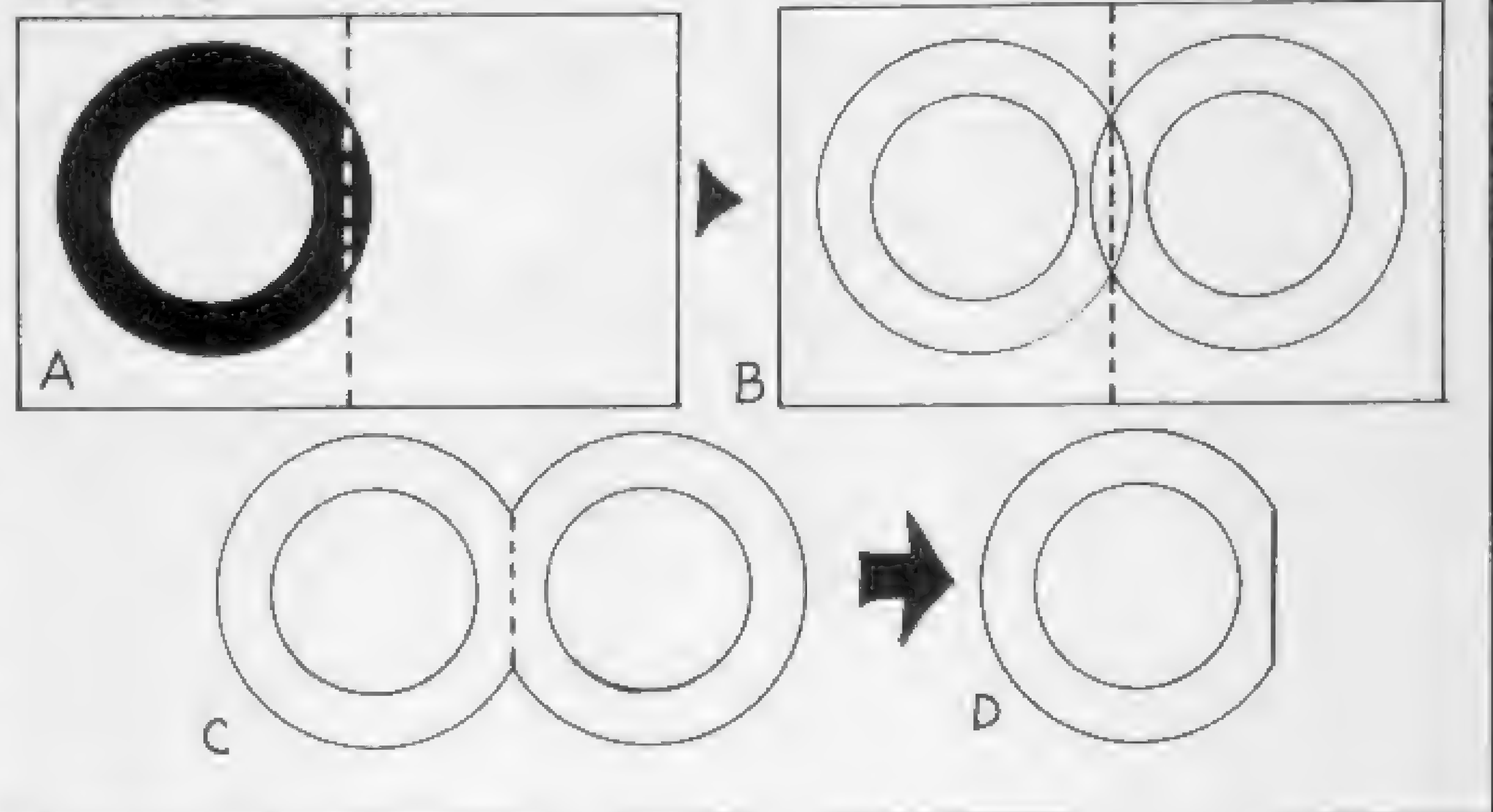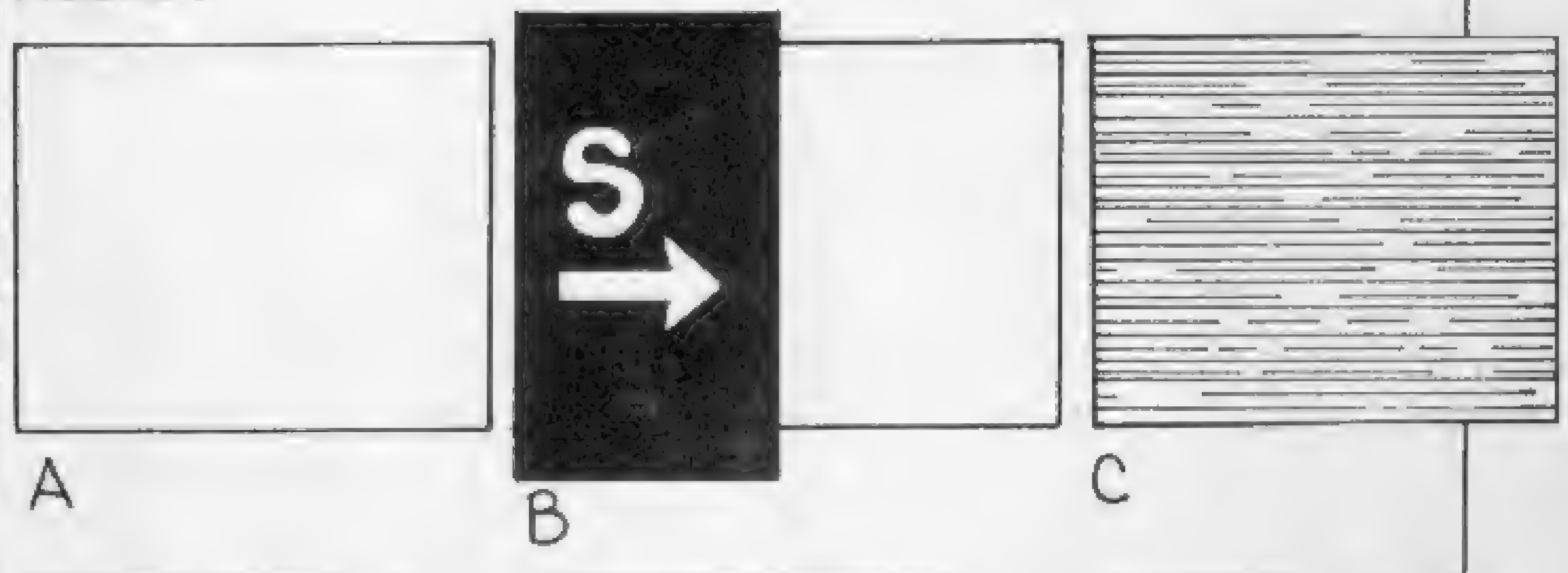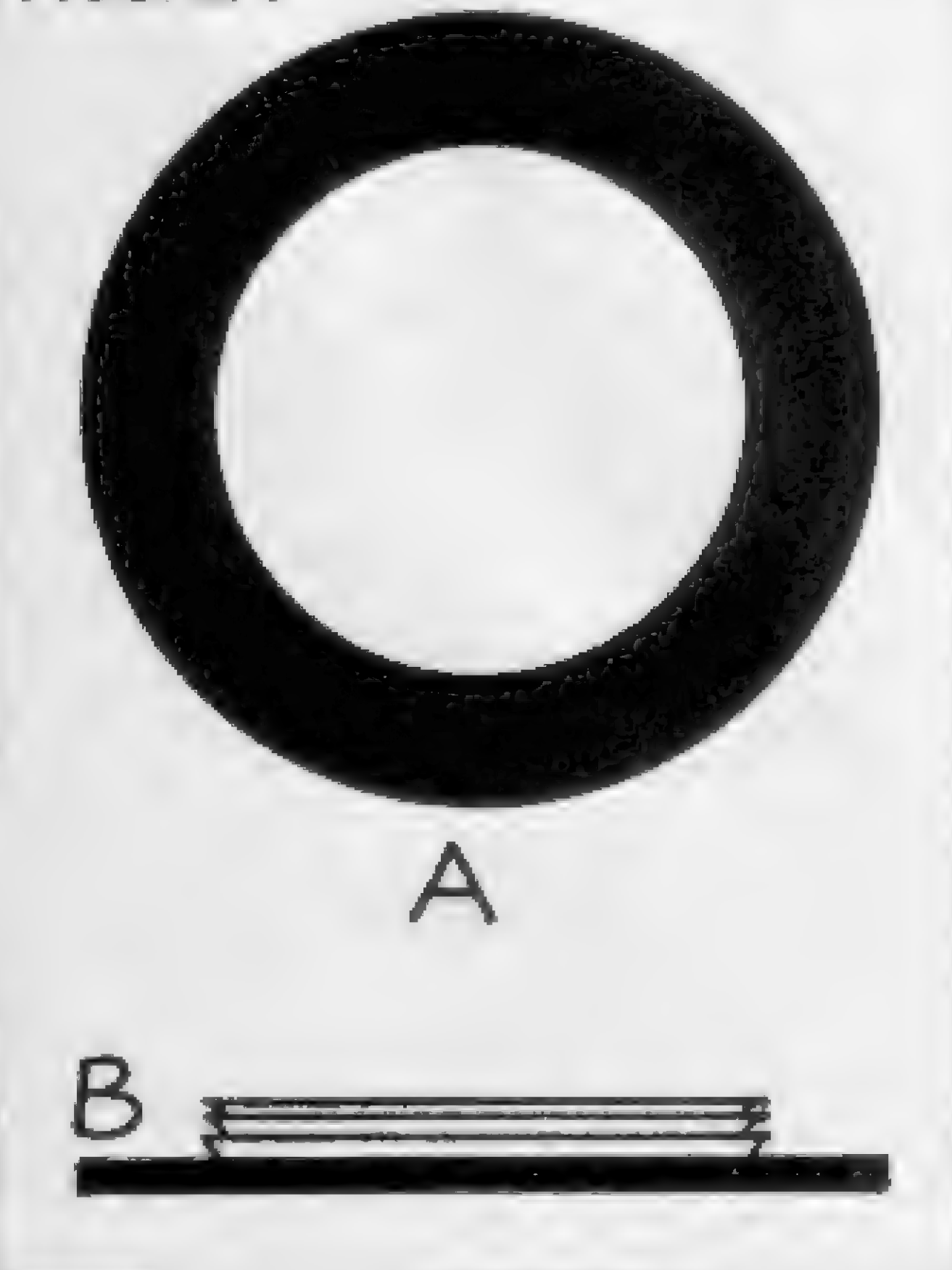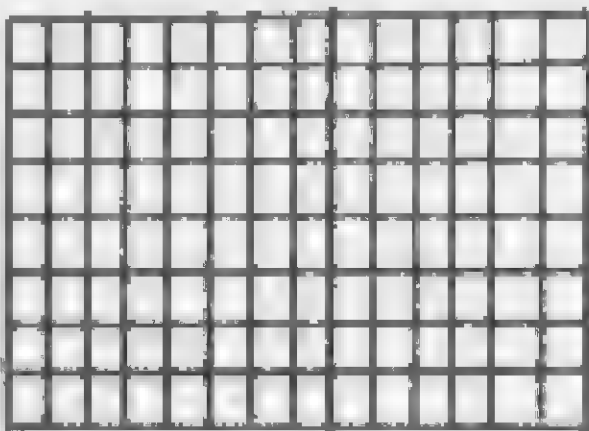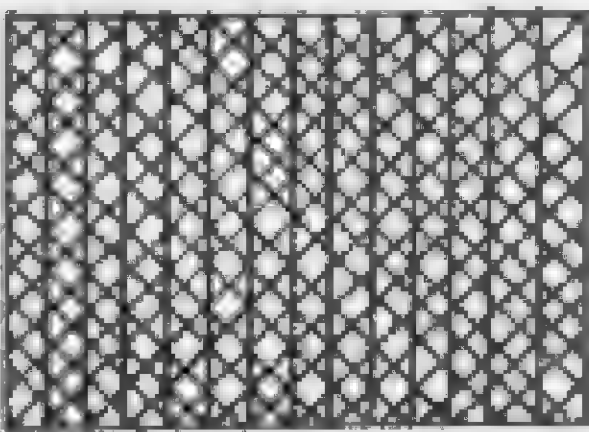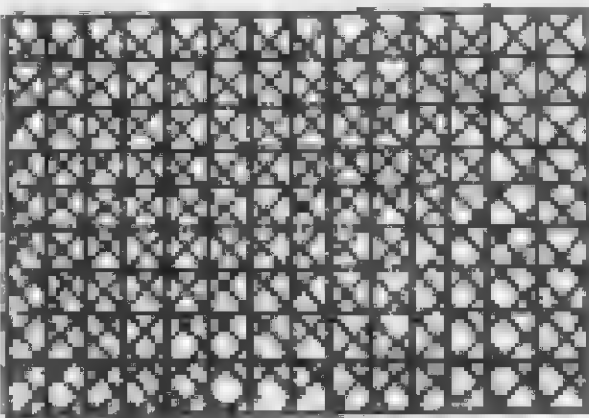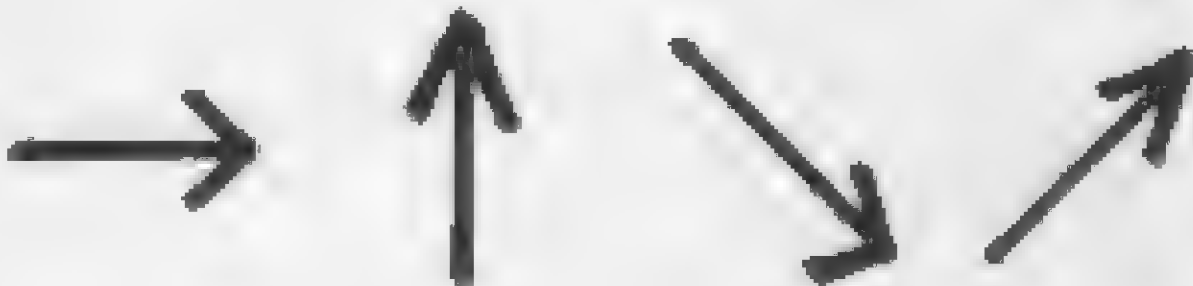
FIGURE 4

STAR POINTS	PATTERN	SANDING ANGLES
4		→ ↑
6		↑ ↘ ↗
8		→ ↑ ↘ ↗

ART JACK IMES JR
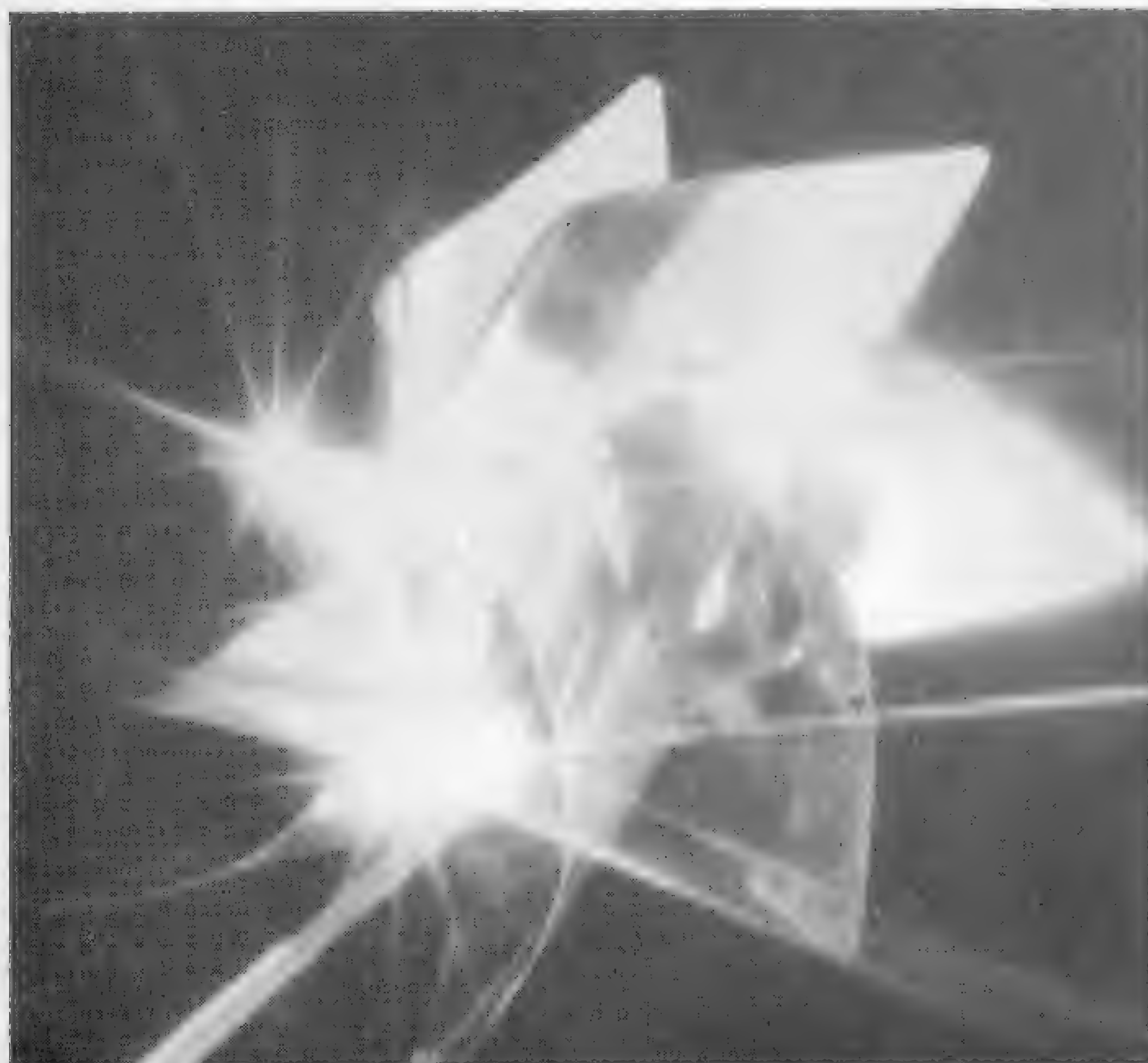
EFFECTS

A shiny pinwheel makes a good subject for the starburst effect. Point light sources are good subjects.
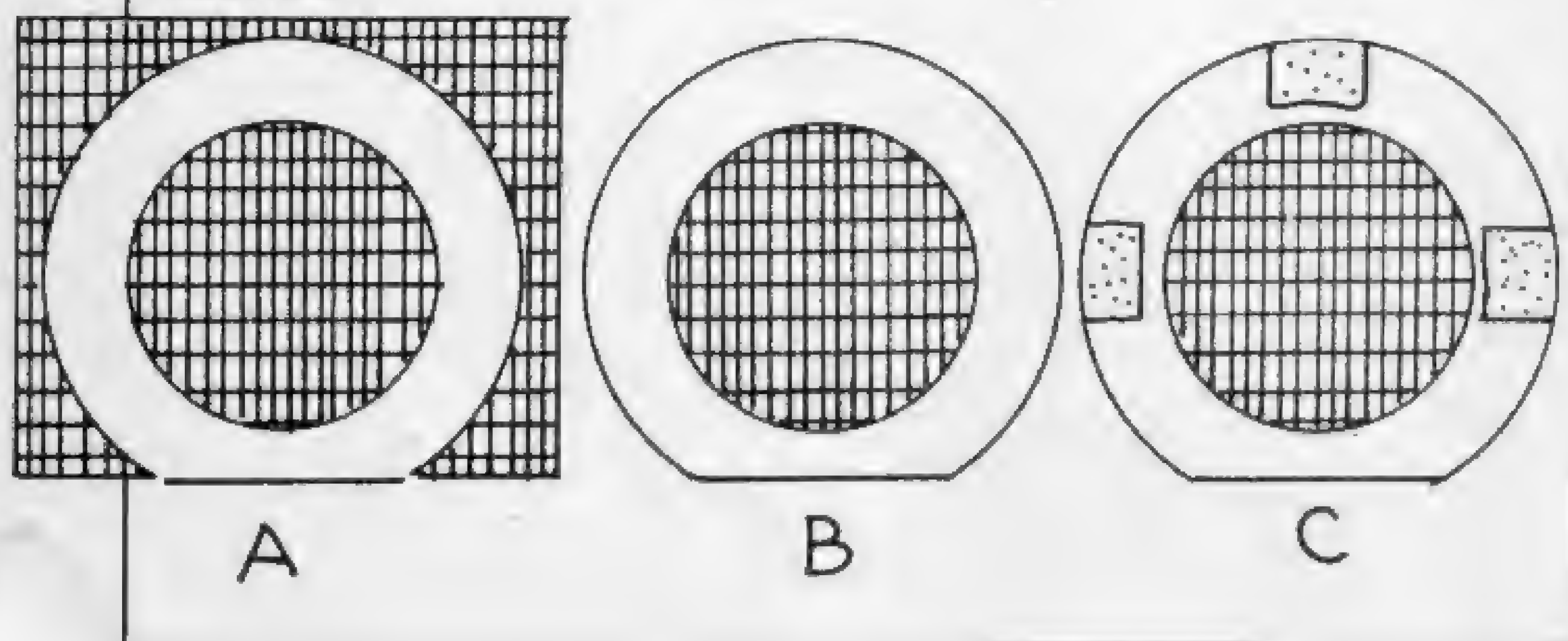
Ambico ring is available in standard millimeter lens sizes of 49 to 72 mm. The correct size for your camera can be determined by checking the normal filter size, checking your camera instructions, or simply taking your camera to the camera store to be fitted. See figure #1.

Step 2: Trace the ring onto a large index card. Ordinary construction paper will serve, but the index card is more durable. To make a proper tracing, first draw a center line (or fold the card in half and then unfold). The ring itself should likewise be marked with a soft pencil line on the flange to aid in positioning the ring. Align the ring's guide line over the line seen on the index card as shown in figure 2-A. With a pencil trace both the inner and outer edges of the ring.

Step 3: Make a second tracing on the other half of the index card. This tracing uses the same procedure and center line as described in Step 2. The finished tracing should look similar to figure 2-B.

Step 4: Cut out the tracing. Make sure you do not cut the dashed line indicated in figure 2-C. The inner circle areas are also cut out and discarded.

Step 5: Fold the cut-out in half along the dashed center line. The two half sections should overlap perfectly as shown in Figure 2-D. This completes the paper filter holder.

THE FILTER SHEET

Step 1: Cut out a 4 x 5 inch sheet of clear acetate (obtained from a plastic "photo" protector or overhead projector transparency sheet). This sheet is shown in Figure 3-A.

Step 2: Use a medium grit sandpaper or emery paper (200-400 grade) to lightly stroke the surface of the plastic sheet. Only one or two strokes in one direction across the entire sheet are needed to engrave dozens of fine parallel lines. Don't press the sandpaper to heavily or this will cause a "frosting" or white area that will ruin the star effect. The stroke action and result can be seen in figure 3-B and 3-C. Only one side of the plastic needs the sanding action.

THE STAR PATTERNS

The sanding stroke angle determines the direction and number of star points. 4, 6, and 8 point patterns are shown in figure 4. Each stroke should be made lightly and in a continous motion in each direction required for a given point pattern.
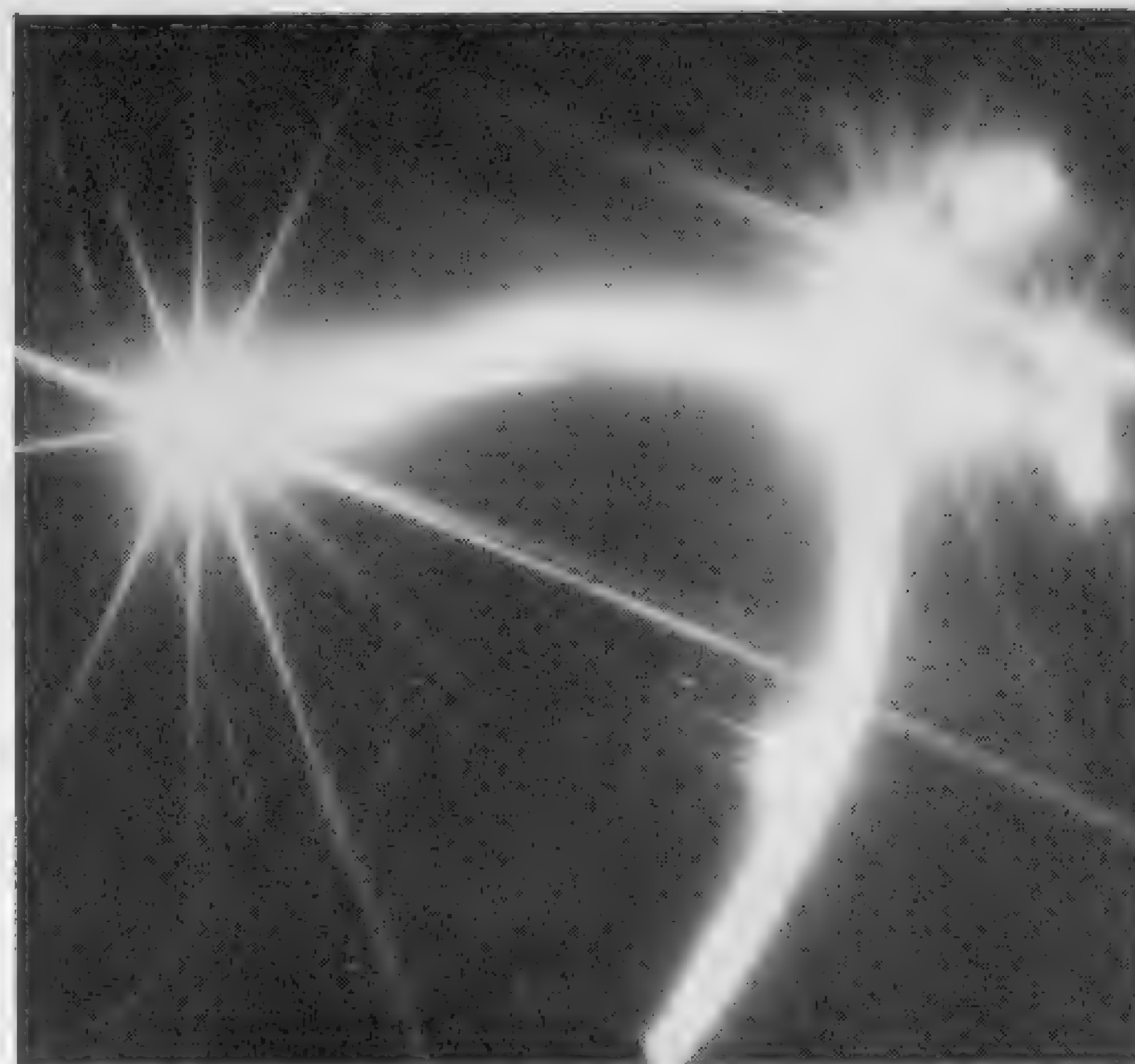
CUTTING THE SHEET

Step 1: Slip the finished pattern sheet between the two halves of the paper filter holder as shown in figure 5-A. Carefully trim the excess acetate around the holder with scissors to produce the filter seen in figure 5-B. Secure the filter sheet in place
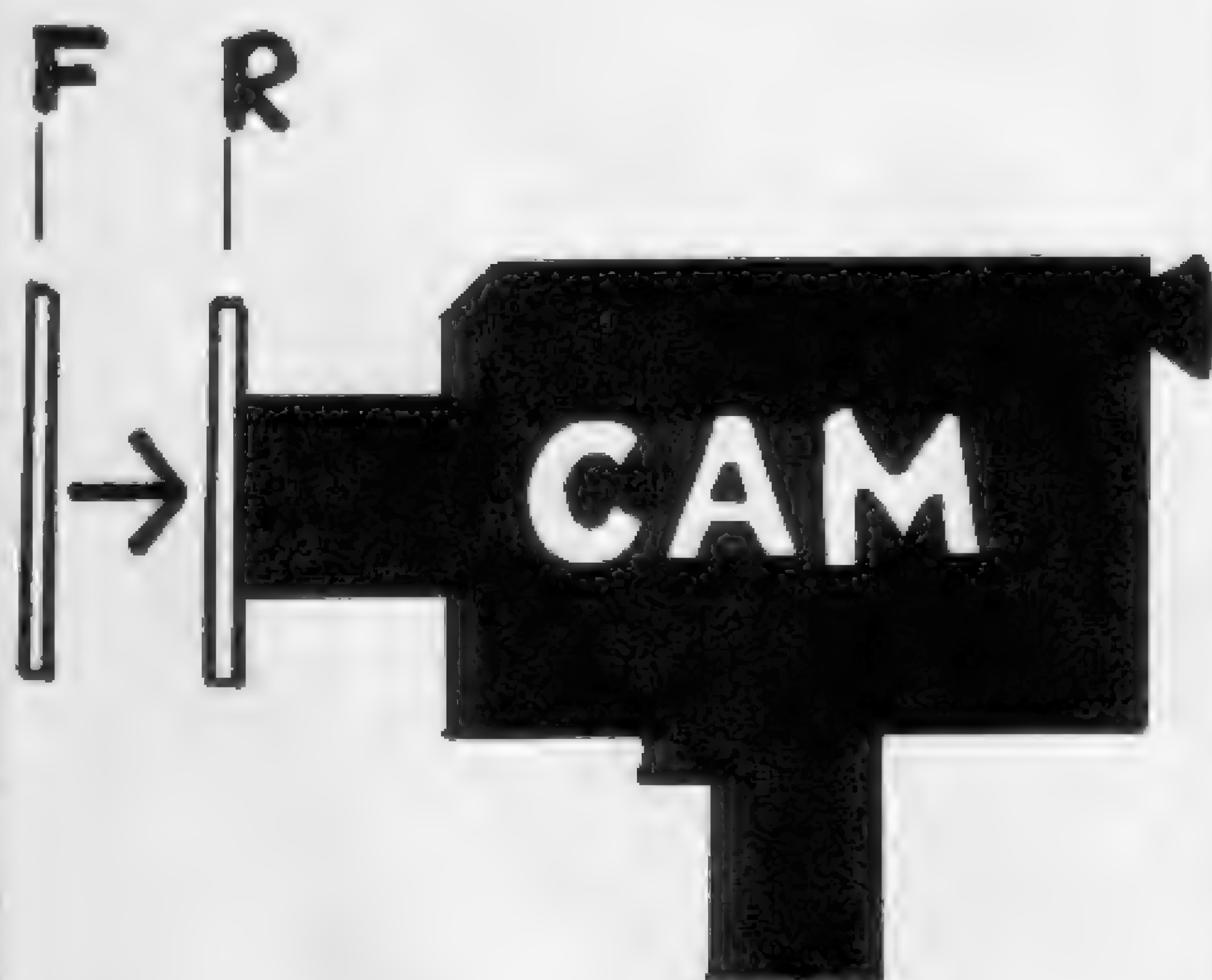
FIGURE 5

A   B   C
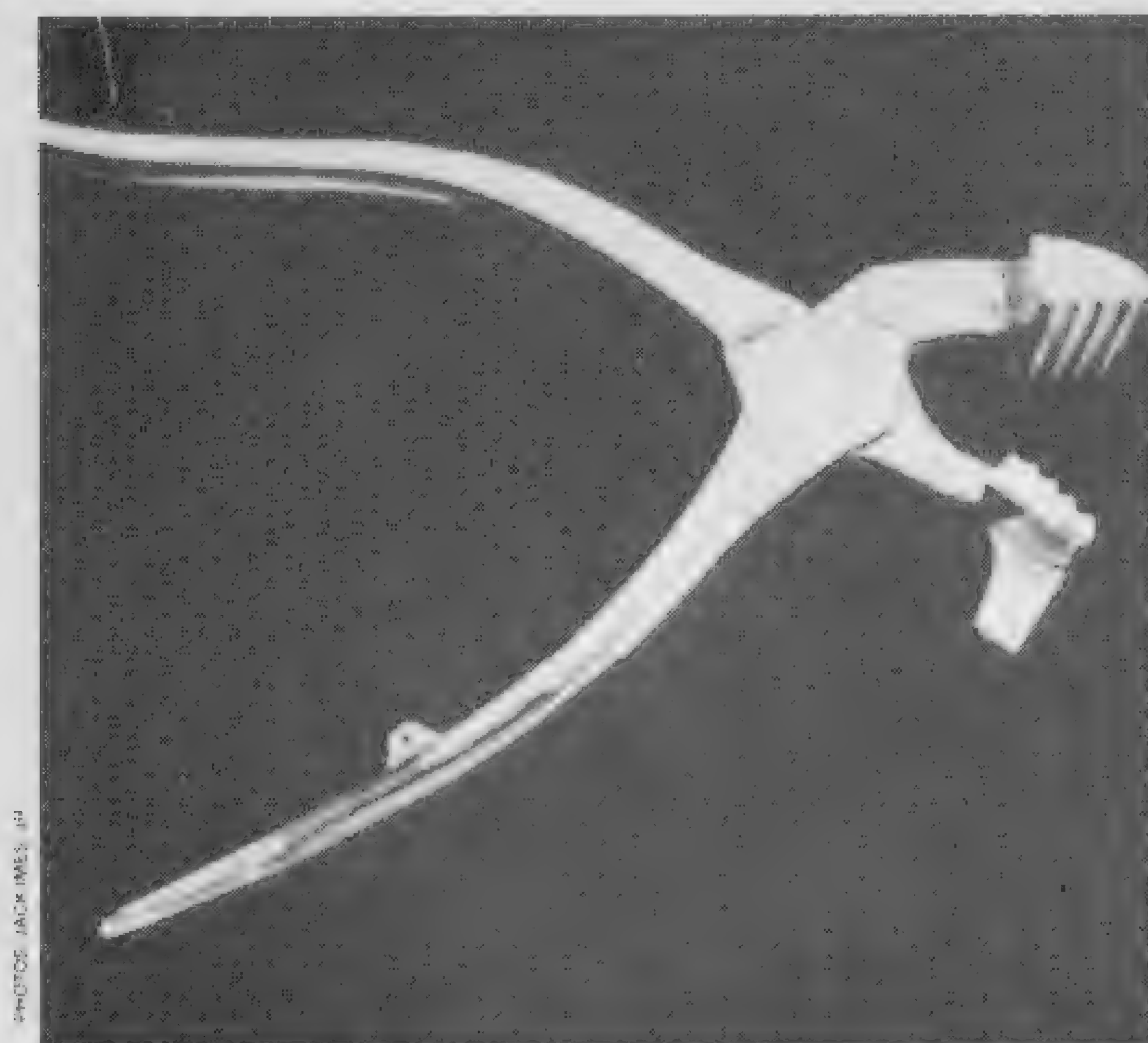
A shiny tool is shown here without the cross-star filter starburst effect.

The same tool with the cross-star filter in place for the dazzling starburst effect.

FIGURE 6

FIGURE 7

by folding short strips of adhesive tape around the paper holder. The finished filter is shown in figure 5-C and should be marked with the type of pattern, 4-point, 4-star, or 4-S, etc.

MOUNTING THE FILTER

Step 1: Screw the Ambico adapter ring onto the camera lens. The plastic flange forms the facing to hold the filter in proper position, as shown in figure 6.

Step 2: Place the star filter against the Ambico ring flange and anchor it into position with two ordinary paper clips. The filter is now ready to be used in photography.

PHOTOGRAPHY

All star filters including the E-Z Effects Star Filter, are intended for use with bright, near pin-point light sources or shiny reflected highlights. The best ray and streamer effects are obtained by shooting at light sources in a scene. The more direct the light source (or reflection) to the lens, the stronger the ray effects. You can quickly estimate your filter's pattern over the film frame by first looking through the camera's viewfinder (and through the filter) at a single studio light or flashlight about 10 feet away from the camera.

The angle of the star point rays should be decided upon before the filter is clipped into place, since adjusting the lens focus may cause the filter ring to also rotate on many cameras. An intentional "pinwheel" effect can be done by simply rotating the filter unattached to the Ambico ring.
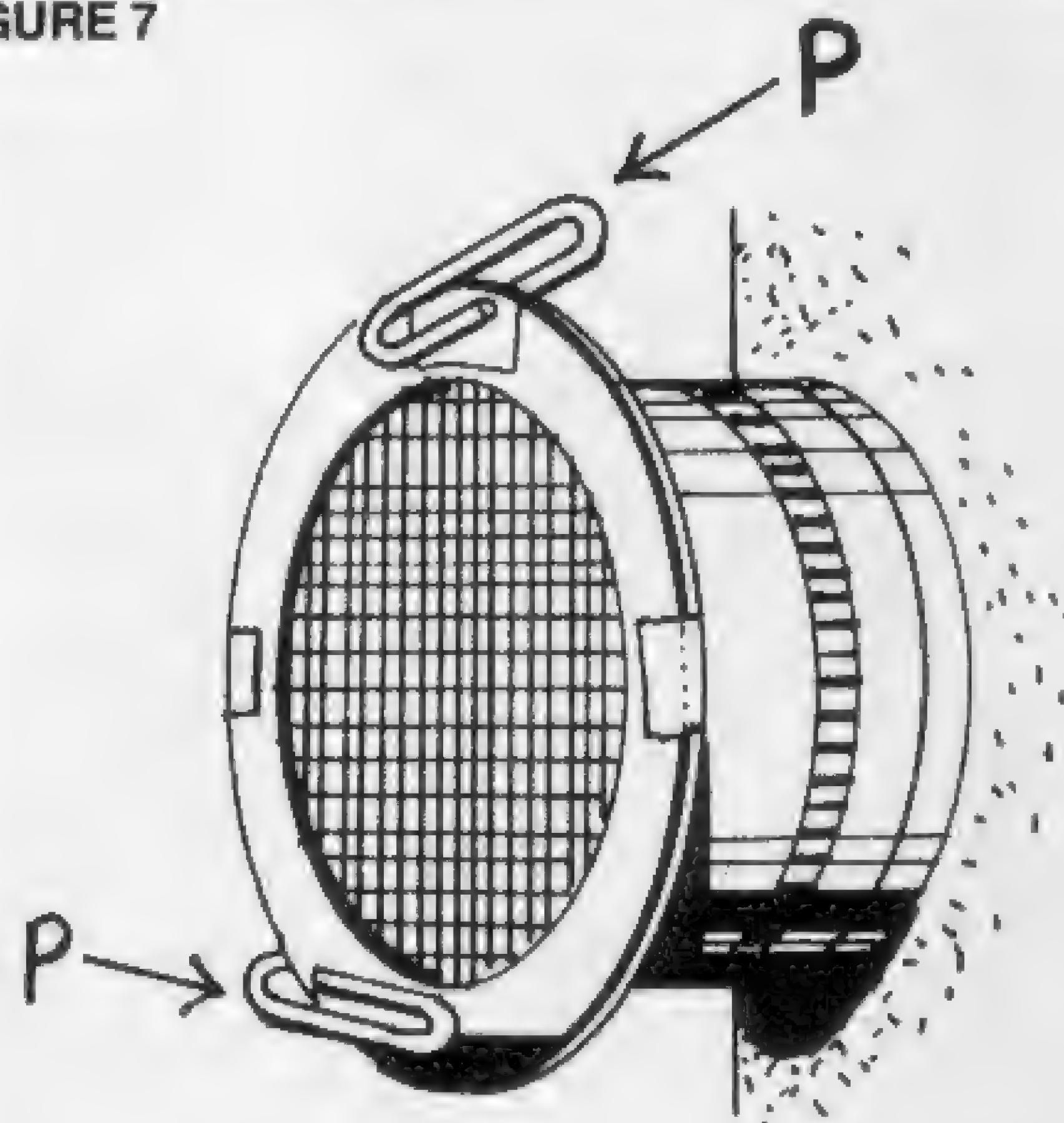
The subject being photographed should be relatively bright and contrasty, with extremely sharp highlights and deep shadow areas for the maximum star burst effect. Too much flat or overall scene lighting tends to wash out the star streamers. Use your imagination to create dazzling starburst effects. Good filming! *CM*

MATERIALS
Sheet of clear acetate, 8 x 10 inches
Index card, 5 x 8 inches
Ambico Adapter Ring, mated to
     camera lens
Two paper clips
Adhesive Tape
Sandpaper (or Emery paper), medium
     grit (200 - 400 grade)
Tools: scissors, pencil

ZYZAK IS KING

By JOHN CLAYTON

Zyzak is King, a "dungeons and dragons fantasy" film made by filmmaker Hugh Stegman as a project at USC film School, has been making the rounds and has met with audience approval everywhere that it has been shown. The film centers around a group of young adults who get together to play dungeons and dragons war games on a computer. Each player assumes an identity and must battle the other players by rolling dice and feeding the information into a computer. The computer determines the outcome by interpreting information fed into it and printing the results of the roll onto its screen. The competition gets pretty intense and, as is known to happen in some games that people take seriously, rivalries and tempers flare.

Each roll of the dice is punctuated by a cut to a fantasy sequence of the action of each player's turn being played out. We see two young men arguing around a computer and a satanic-looking game board with bizarre occult pieces, and then we see one of them in armor fighting a wolfman. The production values in the film are very high and the effects in the fantasy sequences are very slick and convincing. Zyzak is King took second prize

The Balrog creature is a cable-controlled articulated mask, operated from out of the frame of two effects technicians. It was designed and made by Steve Koch.

Zyzak's woman (Charlene Stevens) watches in horror as the devious Balrog sets himself on fire and tries to pull Zyzak into the flames with his whip.

in the 16mm category at last year's CINEMAGIC/SVA Short Film Search.

"*Zyzak* was a USC student production," Stegman begins. "I wrote the script, did almost all of the preproduction and directed. The way you get a student film made at USC is to go in with the preproduction work completed. The school put up $5,000 to produce the film. It wound up costing about twice that much (roughly $10,000) to complete. The rest of the money came out of the pockets of people in the crew.

"I was very fortunate to have a number of very talented people working with me on *Zyzak*. I had an especially talented effects crew: Tassilo Baur, Steve Koch and Ralph Miller. Both Koch and Miller have been past winners of the CINEMAGIC/SVA Film Search with their own films and the subjects of articles in CINEMAGIC [Koch in issue #11 and Miller in issue #15]. They built an amazing dungeon set out of Styrofoam blocks that were sanded down to look like bricks and painted a neutral blue-gray color that looks great on film, regardless of whether it's lit with tungsten or daylight. They added great touches to the set, like very realistic-looking cobwebs made of airplane glue strung over strands of monofilliment. They built a copy of a cobwebber that's a very popular rental item out here in Hollywood for horror and fantasy films. The cobwebber they made simply attaches onto an electric drill. [See CINEMAGIC #19 for the article on how to build your own cobweb spinner that attaches to an electric drill.]

"Ralph Miller created a wolfman makeup for the film," Stegman remembers with a smile. "He also played the wolfman character because he had sculpted it over his own life casts for a perfect fit. He put a great deal of work into it and it's only in a few shots, but it creates a perfect effect. Steve Koch created the makeup for a character called 'Balrog,' which is described as a creature that sets himself on fire and pulls his victims into the flames with his whip. Steve designed the Balrog as an articulated mask. The mask looks great on film, but it limited my freedom of movement with the camera because I couldn't tilt down without showing the two crew members who were operating the mask from out of the frame. [See CINEMAGIC #20 for John Dods' article on articulated full-head masks.] The storyboards called for much more camera movement than I was actually able to shoot when I got onto the set.

"The actor who played the Balrog character could only work for about 15 minutes at a time because he kept passing out under the mask. He could hardly breathe and he was sweating to death under all of the hot lights. The Balrog actor wanted to back out of the project because of the discomfort of wearing the mask, but we couldn't replace him after Steve Koch had designed the Balrog

The wolfman lies mortally wounded at Zyzak's feet. Ralph Miller designed and made the wolfman makeup creation and played the part as well. The very elaborate costume is seen only very briefly in the film.

mask to fit his head exactly. There are several close-ups in the film showing the Balrog on fire and spitting flames. These were done with just the mask itself on a stand being operated without the actor inside. We had tubes inside the mask blowing smoke out of its mouth, nostrils and eyes and we had flames in front of it so it looks like it was catching fire. Although the actor who played the Balrog had a hard time of it—he complained that he couldn't breathe when Steve Koch was casting his head in alginate—Ralph Miller was more experienced and didn't seem to mind the discomfort.

"The flame scenes were shot one night on a closed set with about six people standing around with fire extinguishers,"

Stegmen remembers. "If anything had gotten the least bit out of hand, that whole sound stage wouldn't be there anymore. The soundstage was built at USC around 1919. There's a place to tie a horse up in front of it. It was built right after the First World War as a craft shop for the architecture department as a project to see what they could do with recycled lumber from the war. One stray spark would have ignited that place like a torch. The whole effect had been very carefully planned for a long time. It's *not* the type of thing you should try in your garage. There's a safe way to create any effect you can think of, but you have to take the time to think of the safest way to create an effect.

"Tassilo Baur, Steve Koch and Ralph

Zyzak (Bob Forward) enters the dungeon set. The set is constructed of Styrofoam blocks, painted and sanded. Note the cobwebs hanging in the archway. The effects crew built cobweb spinner drill attachment.

Zyzak is wounded by an arrow fired from his alter-ego's (Gary's) boss, Mr. Pennybarker. The scene was shot in reverse. The arrow was a latex appliance that was actually yanked off Zyzak's chest with invisible wire.

Miller stayed together as an effects team after we finished shooting Zyzak. They helped to raise the production value of several films made at USC. After Zyzak, they started charging for their services. I was the only filmmaker lucky enough to have these talented people create effects for free. Tassilo Baur is a master at casting plastic and latex. He made many of the props as well as acting as FX director and optical compositer. He's better than a lot of professionals out here in Hollywood, although I imagine that by now he's a profesional himself."

There are several optical shots in Zyzak that also add to the slick look of the film. One shot at the end of the film shows Zyzak at the summit of a mountain with his beautiful woman by his side as he proclaims himself king. He lifts his sword skyward and it is struck by lightning, but they are unharmed. The lightning bolt was the gods forging a superior weapon for the great warrior.

"We shot the opticals on 35mm to help reduce generation loss," Stegman remembers. "It was the first time in many, many years that the USC optical printer had been used for 35mm work. The mountain was really only three feet high. The whole foreground of the mountain was a glass painting done by Steve Koch. The clouds were also glass paintings, animated in multiplane for perspective. There are three separate planes of clouds in the shot, all moving at slightly different speeds. A hand-painted rotoscoped hold-back matte was necessary to composite Zyzak into the frame. We shot the scene on an old 35mm Mitchell with dual registration pins. The camera was ancient, it hand't seen the light of day for years. We worked with short ends to save money, and as a result the color on the effects scenes isn't perfectly matched, but it's not all that noticable and quite acceptable.

"In addition to having a full time effects crew, which was unheard of at USC, we also had a full time costume person, Valerie Bonne, who was a beginning cinema student. She also did the glamour makeup on the girl, and she did fantastic costume work.

MUSICAL SCORE

"The music for Zyzak is an original score composed by a USC music student named Mike Abels. We used the largest orchestra ever assembled to record the soundtrack for a student film at USC. We used between 25 and 30 musicians on the soundtrack—all of whom were USC music students. The soundtrack was recorded in a room in the music building. Although the capabilities existed at USC at that time to record music soundtracks in sync with the film, the equipment was very old and forced you to be creative to achieve the results you wanted. All of that

is going to change in the very near future at USC and things will be quite different than when I made *Zyzak*.

CINEMA CENTER

"USC is about to get a brand new cinema center that will consist of three new buildings. The old cinema center is ancient. It dates back to the twenties and most of the equipment is fairly old. The new facility will be called the Lucas Cinema Center because George Lucas donated lots of money to the project and because he's one of USC's most visible alumni. Other notable film industry people who also contributed to the project are Steven Speilberg and producer Howard Koch. The new facilities will rival what the big studios out here in Hollywood have. The new Cinema Center will include a state-of-the-art music scoring stage, and plenty of amazing new equipment. USC's film school is really moving up in the world with its new Cinema Center.

SOUND FX

"Even though most of the equipment available to students at the time I made *Zyzak* was old, USC still had everything I needed to achieve the results I wanted, it just took longer. Some of the more interesting sound effects in the film involved the voices of some of the characters. For example, Zyzak's voice was run through a synthesizer. We mutated his voice from normal to a menacing synthesized voice by having both a normal and a synthesized sync track. The synthesized track was made by taking the normal sync tack and running it through the synthesizer. We ran both tracks in sync and cross faded from the normal to the synthesized track, causing Zyzak's voice to mutate.

"The Balrog's voice was synthesized on a digital Eventide Harmonizer, which is the standard method of creating an extraterrestrial's voice for science fiction films. Zyzak's voice was recorded in sync, but the Balrog's voice had to be luped because the actor couldn't speak through the articulated mask—it would have sounded like a muffled mumble. The Balrog's voice had to be post-synced by cutting frames out of the fullcoat to match the movement of the mouth on the articulated mask.

"Both the soundman and I took synthesizer courses to allow us access to equipment. We were able to get thousands of dollars worth of synthesizer time for free because we were taking the courses. I took every synthesizer course that USC had to offer, which meant that I had a synthesizer course every semester for about two years.

GOING BACKWARDS

"We also had some reverse film effects in *Zyzak*," Stegmen recalls with a boyish grin. "The scene where Zyzak gets shot by a crossbow was shot in reverse, Tassilo Baur made a latex appliance of the arrow in Zyzak's chest—covered with blood of course—and we yanked it off with a wire while filming the scene in reverse. We cut out the only frame in which the wire showed, and no one is the wiser." [See "Going Backwards Made Easy" in CINEMAGIC #8 for tips on reverse filming.]

THE USC EDGE

"Going to USC has advantages over going to other film schools because you're right where all the action is in Hollywood and there's a good network once you get out," Stegman asserts. "You can spend your years in film school making contacts in the industry so that you can be well-connected by the time you get out, and hopefully one of your connections will lead to a job in the industry. There's also the advantage of having access to all sorts of filmmaking equipment available for rental. Some of the students get access to amazingly sophisticated equipment—dollies, cranes—you name it. One kid even shot a class assignment with a panaflex camera—try that in some midwestern film school.

FUTURE PLANS

"Now that I've finished the graduate program at USC's Cinema Department, I'm out writing scripts and working on low budget films," Stegmen reveals. "I think my main interest lies in writing—although I love driecting as well. I've been taking some of my scripts around, trying to get a feature produced. I have a feature length version of *Zyzak* that I've been taking around, as well as a feature about a college football team and the relationships between the players.

"As far as the short version of *Zyzak* is concerned, I've shown it around and gotten pretty good reactions to it. I showed it at Forry Ackerman's birthday party and everyone loved it. John Millius (director of *Conan*) showed it to his scriptwriting class at USC. He couldn't believe that it was made as a student production, mostly because of the quality of the special effects, which as I've said I owe to Tassilo Baur, Steve Koch and Ralph Miller. I'm busy now trying to generate interest in my feature-length scripts and in my scriptwriting abilities. I'm also thinking of applying for an AFI grant, which would be the only way that I could afford to make another short film now that I'm out of school."

Hugh Stegman is a young filmmaker with the talent and the will to succeed. Like many other talented young filmmakers, he's doing what he should be doing pursuing his career in Hollywood, the "dream capital of the world," where—if you will it—your own dreams can come true. ◁

Effects technician Ken Walker adjusts his finely crafted steel and aluminum armature.

Armatures For Less

By JOHN DODS

PHOTOS JOHN DODS

You've probably heard about those stop-motion armatures that cost thousands of dollars to build. *This* one costs $197.22 and it's good. What's more, that price includes the cost of the drill press used to make it.

Using a guardian "DP-Mini" $85.00 drill press, a $20 vise and about $55 worth of drill bits, counter sinks, and rotary files, Ken Walker fabricated his first armature—for a model Allosaurus—from a design by Ken Brilliant. All armature materials were purchased from Small Parts, Inc. 6901 N.E. Third Ave., P.O. Box 381736, Miami, FL 33138, for a modest cost of $40.27.
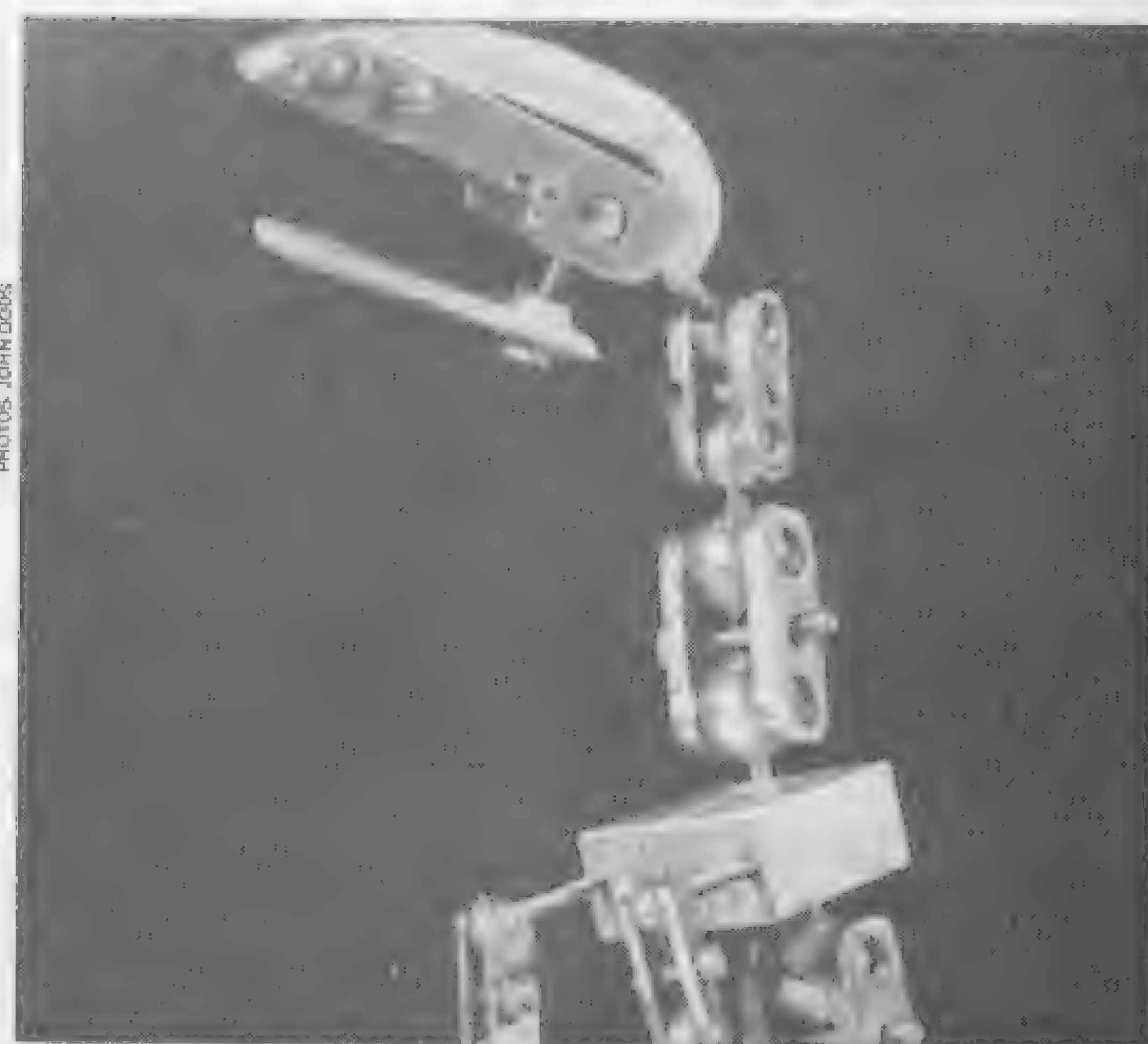
Armature designer Ken Brilliant put a ball joint in the jaw to allow for side to side and circular grinding movements.
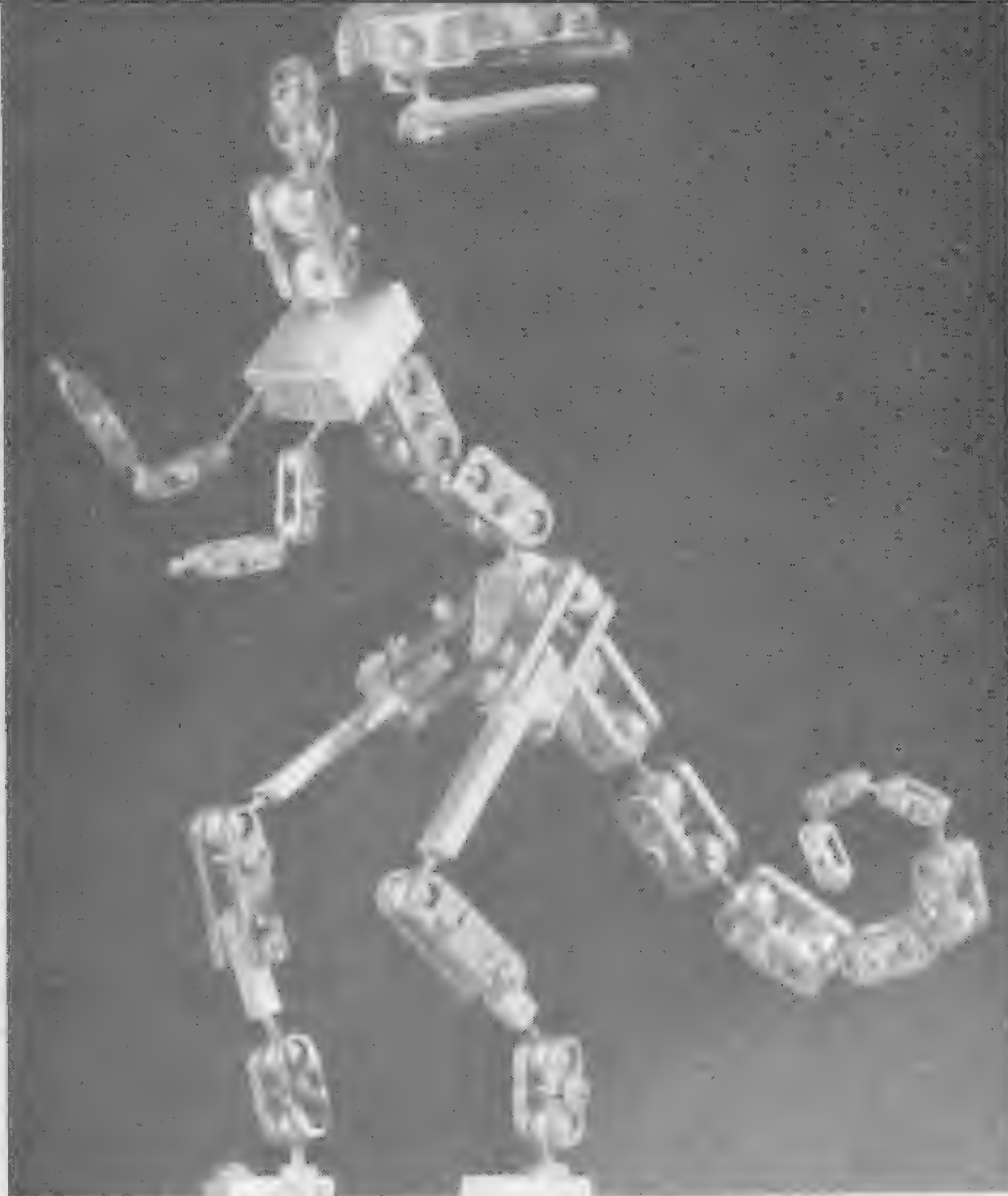
Vibration on small drill press prevented Ken's successful use of "ball and mill" to make sockets in the plates. Instead Ken used a round rotary file with liberal amounts of cutting fluid with very good results.
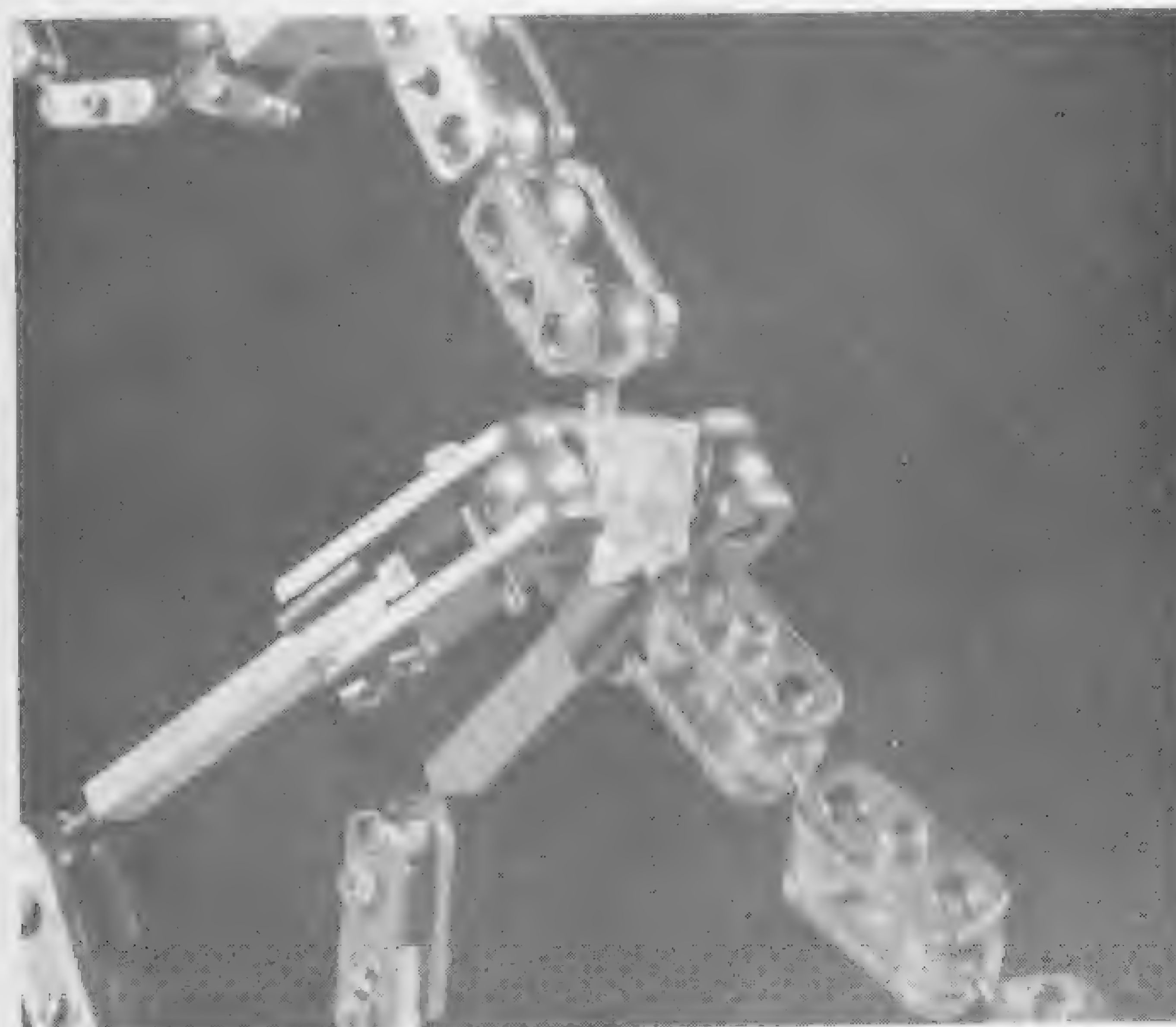
Tapped plates are held together using socket head tap screws which do not require nuts when they are fitted into tapped holes. The cap screws are tightened with a hex wrench.

Producers'
BULLETIN BOARD

Elysium. A group of soldiers fighting in a future jungle warfare situation discover that they're killing the same enemy soldiers over and over again. They soon realize that the enemy is using witchcraft to bring their dead back to life. Horrified, they send a video journalist back to a nearby outpost with solid recorded evidence of their awful discovery only to find in the end that their own side is bringing them back to life. Producers: John Woods and Mike Lyddon. Director: Mike Lyddon. Script: Mike Lyddon. Cinematography: John Woods. FX: Mike Lyddon, Jon Giba and Jim Bays. Cast: Jim Bays, Shane, Ron Kostas, Jon Giba, John Woods, Al Williamson and Aubrey Saxon. (Mike Lyddon, 11822 Rexford Rd., Garden Grove, CA 92640.)

Da Drommen Brast (The Day the Dream Shattered). A romantic fantasy about a kid who grows up in a big city and has a series of strange dreams in which he kills off his schoolteacher with a magic sword and gets the girl. The dream sequences are set in ancient-looking locations shrouded in velvet-black fog and eerie lighting. Director: Jan Rasmussen. Writer: Nicolas Barbano. Camera: Bo Odengaard. Makeup/Sound: Ken Raven. Original Music: Benni Le Fay. Video, color, sound. Running time: 30 minutes. (Herlav Videovaerksted, c/o Jan Rasmussen, Hojbjergvej 35, 2730 Herlev, Denmark.)

Dream Reaper. Twilight Zone style of drama and horror. A young boy has a dream about a cloaked person warning him that his dreams can and will release his own evilness. He awakes to find a demon murdering his friends. Of course, a surprise ending. Producer/Director/Writer: Mark Tureski. Cast: Darryl Yaworski, and Vicki and Alison Holder. An Image Design Co. film. Super-8, color, sound with original music score by Mike Tureski. Running time: 20 minutes. (Image Design Co., c/o Mark Tureski, 1 Prince Phillip Dr., St. Catherines, Ontario, Canada L2N 3H9.)

Necromancy. The story of a psychic who summons human beings to his deranged household, to make them into demons who will do his bidding. But his fate is yet to come! Producer: Eagle Mountain. Director: Wilton Keornig. Makeup: Grady Holder. Cast: Wilton Koernig, Grady Holder and Todd Wulfmeyer. FX include: special makeup, energy bolts and miniatures. Super-8, color. Running time: 15 to 20 minutes. (Grady Holder, 6064 So. Fairfield St., Littleton, CO 80120.)

NIGHT FLIGHT

SHORT FILM SEARCH

This year's winners of the CINEMAGIC/School of Visual Arts Short Film Search will be aired on the world's highest-rated cable television series, *Night Flight.* This nationwide broadcast will be on Friday, November 25th beginning at 11PM Eastern Standard Time, 8PM Pacific Standard Time. The second half will air Saturday, November 26th beginning at the same times. *Night Flight* can always be seen on the USA Cable Network at 11PM, EST and 8PM PST, as a four-hour broadcast, every Friday and Saturday night. Today, cable TV, tommorrow the world!

Escape. Steve Deneri, America's top scientist, is taken captive by El Salvadorian rebels in his home in Pennsylvania. The rebels are using Steve as a tool to get the United States Government to give in to their demands. Steve's brother, Martin, and government agents try to help Steve escape, but their plan fails. Things begin to look hopeless, but Steve is a survivor and he escapes his home of captivity and wanders out into the streets of his evacuated neighborhood, only to find the area well guarded by the El Salvadorian rebel forces. Great action scenes as Steve tries desperately to escape. Producer: Skaldun Pictures. Writers/Directors: Stan Skalski and Dan Dunn. Camera: Stan Skalski, Dan Dunn, Don Martin, Dave Noble and Mike Greco. Cast: Stan Skalski, Dan Dunn, Dave Noble, Don Martin, Eugene McKnight, Caren Skalski, Mike Greco, Bo Skalski and Gideon Skalski. FX include: great action scenes, some violence, makeup and real weapons and war costumes. Super-8, color, sound. Transferred to VHS and Beta video. Running time: 45 minutes. (Skaldun Pictures, c/o Stan Skalski, 207 Greendale Rd., Philadelphia, PA 19154.)

Help Wanted. Comedy of commercials, special effects and out-takes from earlier SR Film Productions films. Music from Styx, Men at Work, Pink Floyd and Cheech and Chong: used by permission. Director: Shannon Richardson. Writers: Shannon Richardson, Kirk Davis, and Chris Hinders. FX include: lap dissolves, laser effects, blood makeup effects, animation and floating objects. Super-8, color, sound. Running time: 10 minutes. (SR Film Productions, c/o Shannon Richardson, 2903 Harrison, Amarillo, TX 79109.)

A Tale of Two Sillies. A Masterpiece Theater presentation. The story of haughtiness, paranoia, and the death of two kingdoms: The Disunited States of Armamenta and the Soybean Union. Animated with cut-outs. Directed, written and animated by Kenneth Devoy "with a little help from his friends", John Hegland (artist), Jeff Pharr (the best to-let animator in the business), Gary Terry (fellow insomniac). Super-8, color, separate sound on cassette. Running time: about 2 minutes (Walrus Productions, c/o Kenneth Devoy, 754 Pine Ave., Waynesboro, VA 22980.)

The Loner. A story about survival and friendship in a post holocaust nomad anarchy. Which is more important, and why? In a world without hope, all that the survivors have left is their dreams, and the desire to make them come true. Producer/Director/Writer/Editor: Jeffrey Kaplan. Cast: Jeffrey Hock, David Black, James Walker, Lisa Morrissey and Anthony Fagganni. Super-8, color, separate sound (narration) on cassette. Running time: 10 minutes. (Jeffrey Kaplan, 37 Red Barn Lane, Middletown, NY 10940.)

Planet Claire. A surrealistic interpretation of the song of the same name as performed by the B-52's. Producer: Little Bray Studios. Director/FX: Elizabeth Warren. Cast: Leicha Heathcoat. FX include: psychedelic imagery and several subliminal shots. Super-8, color, sound. Running time: 4 minutes. (Elizabeth Warren, 26 Hollen Circle, Fairmont, WV 26554.)

Forbidden Zone. The story of a spy who dared to trespass into the Forbidden Zone, and found himself trapped in an eternal living hell. Producer: Robert Smith. Director: Stephen Popule. Writer: Doug Astarita. Makeup FX: Greg DeSanto and Joe Currie. FX include: prosthetic mutant makeups, blood and superimposed titles. (Silver Screen Productions, 36 Sylvan Ave., Tuckahoe, NY 10707.)

Angel With a Dirty Spaceship. A spoof on almost every film to ever come out of Hollywood. Our hero, Cagneus, is just looking for a good time. A beer guzzling, junk food chomping TV freak, he takes on the government and learns how to drag race in space. Producer/Director/Writer: Michael Grodner. Cast: Ron Brill. FX include: Miniatures, animation, explosions and more. Super-8, color, silent. In preproduction. (Michael Grodner, 68-37 Yellowstone Blvd., Forest Hills, NY 11375.)

Magaglop vs. Gumzilla. The peaceful quiet of a small town is brutally destroyed by the sudden appearance of the giant creature known as Megaglop. With even the army totally helpless, can Gumzilla halt this dreaded juggernaut in time? Producer: Karen Spaghetti for Penny Arcade Productions. Director/Writer: Mark Der Marderosian. Stop-motion animation. Super-8, color, sound. Running time: 3 minutes. (Penny Arcade Productions, 16 Murray Terrace, West Newtown, MA 02165.)

Invasion of the Little Space Guys. A young girl's home is invaded by fiendish little spacemen in this tongue-in-cheek parody of 50's B horror/sf films. Producer: Little Bray Studios Director: Bob Tinnell. Cast: Elizabeth Warren. Super-8, color, sound. Running time: 3 minutes. (Little Bray Studios, % Bob Tinnell, P.O. Box #1, Rivesville, WV 26588.)

Friends. Children's story. Two very close buddies get into an argument about a destroyed tree. A fight begins and it gets worse until one buddy dies in the conflict. The survivor is hated throughout the land and turns evil. He becomes so evil that he can't stand himself, so he turns back to being normal and his buddy miraculously comes back to life. Producer/Director: Mike Tureski. Writers: Mike and Mark Tureski. Sets: Ron Schaffner. An Image Design Co. film. Super-8, color, sound. Stop-motion animation. Running time: 10 minutes. (Image Design Co., c/o Mark Tureski, 1 Prince Phillip Dr., St. Catherines, Ontario, Canada L2N 3H9.)

23 is 2 Phaar Aweigh. A visual fantasy salute to Robert A. Wilson and the number 23, the mysterious number which is somehow connected to the Dog Star, Sirius, and is discussed in Wilson's book "Cosmic Trigger." Producer/ Director/ Editor/ SFX: Brian Short. Cast: Jeff Ball and Brian Short's hand. FX include: extensive use of time lapse, animation and pixilation, special makeup effects. Super-8, color, sound. Running time: 4 to 5 minutes. (Brian Short, 915 177 Ave. NE, Bellevue, WA 98008.)

The Invisible Chess Game. Two invisible twins, Fifi and Peaches, set out to compete against each other in a championship chess match. Since Peaches has a nasty temper the game is planned to be rough . . . Producer/Director/Writer/FX: Mark Bernard. FX include: double exposures, titles and rotoscoped outlines. Super-8, color, separate sound on cassette. Approximate running time: 15-18 minutes. In preproduction. (Mark Bernard Productions, 32 Wilk Rd., Edison, NJ 08837.)

Battle Beyond the Sun. Jason Star and his star warriors chase a space pirate ship to the planet Terra IV. There they encounter deadly monsters, plants, and weird weather. When they reach the pirates' base they have a laser shoot-out and Jason fights the pirate leader with energy swords. The leader escapes in his starfighter with Jason chasing after him. Producer/Director/Writer: Clay Menzik. Camera: Clay Menzik, Tony Prettenhofer and Mark Menzik. Cast: Clay Menzik, Mark Menzik and Tony Prettenhofer. FX include: explosions, miniatures, animated lasers and more. Super-8, color, sound. Running time: 10 minutes. (Menzik Productions, c/o Clay Menzik, 810 Wauconda Rd., Wauconda, IL 60084.)

Dr. Carrass' Hobby. An animation movie about a doctor who removes his wife's fetus from her womb and tries to keep it alive in his laboratory/greenhouse on a homemade life support machine. The fetus dies, but Dr. Carrass is not discouraged, as he sets off in search of other pregnant women. Producer/Director/Writer/Modeler/Animator: Andrew J. Cook. Video tape, color, sound. Running time: 12 minutes, 42 seconds. (Andrew J. Cook, 121 Caversham Valley Rd. Dunedin, New Zealand.) CM

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"Tell you what, Chuckie! We'll let the lab handle that dissolve effect after all!"

MARK SULLIVAN'S "HIGHRISE"

A CINEMAGIC Success Story: From Basement Filmmaker to Hollywood Special Effects Artist

By JOHN DODS

Mark Sullivan isn't talented—he's *talented*. With $3,000.00, a Bolex Rex 4, and seemingly inexhaustible inventiveness he has created the spectacular *Highrise*, a 2½ minute-long showpiece of special effects and novel storytelling assembled over two years with professional knowhow and determined effort. Looking at *Highrise* it's hard to believe that its sophisticated mattes and opticals were created *entirely in the camera*, and it's difficult to tell that a film of such apparent physical size and realism was shot mostly in a basement.

THE PLOT OF HIGHRISE

With a burst of cel-animated fireworks the words rush forwards: "A Mark Sullivan Cinematic Tidbit." Three establishing shots place the action in a modern city where busy action fills the streets. Heads turn suddenly upwards to a buzzing hum from above as an alien flying machine passes high overhead.

As the insect-like machine's shadow passes upwards against a skyscraper

"HIGHRISE" is supered on the building's side.

The fantastic craft lands atop the tall building as its insect-like appendages grasp and dig into the structure's top, sending weirdly violent bolts of white electricity shooting from the bug legs down the building towards the sidewalk below. People flee the impending violence. Massive bolts strike the pavement and the lens flares from the brilliance of the light. The building cracks at the base.

Lights glow and the spacecraft moves upwards, still clutching the immense structure. The skyscraper is uprooted in an incredible long shot that suspends disbelief: real people and traffic move in the foreground of the shot to reveal the full immensity of the building as it rises upwards, rubble drops in chunks from the base.

From a bird's eye view we see the building continue its ascent. Visible in the distance is the gaping hole from which the monolith has been plucked.

The alien craft pulls the building higher through the clouds and into the darkness of outer space. Well away from the Earth, it veers off sharply, moving towards another planet.

Somewhere in the desert an old man crawls across the sand. He is frightened by the buzzing hum he hears and quickens his struggle across the desert. The alien craft decends and speeds over the surface, Earth building still in tow. As the camera races to follow the fast action, foreground dunes, cacti and rocks are blurred and streaked.

Seen from above, an immense shadow covers the crawling man. The alien craft releases the building and it plummets downwards.

The camera looks straight up to see the skyscraper fall. It covers the frame, landing on the planet with a resounding thud.

Fade in to the old man laying unconcious, but not hurt. He wakes and turns to see that the concrete form has struck the planet only a few feet from his body. He watches as the flying machine departs. It rises, turns and with a flare of its booster engines streaks into the far distance leaving behind a trail of fading light. The now tiny form of the ship slows, acends through a cloud bank, continues upward and is gone.

The final shot presents a relevation. In a wide master shot we see that the desert is littered with skyscrapers. They are tilted, battered and cracked—all apparently dropped from above in some bizzare extraterrestrial game of cat and mouse. Birds fly through this surreal setting.

Just before the fade out, one tall structure tilts slightly to bump against a towering neighbor and rubble is knocked loose to fall slowly to the desert sand below.

GETTING IT DONE!

"It's always frustrating when you have an idea for a film and can't get it made," says Mark Sullivan. "A lot of people have ideas but for some reason they can't make their film. Either they don't have the time or—with some people that are married—family obligations interfere. *I just wanted to make this movie.* I wanted to complete my original idea and have a film to show. I wanted to prove to myself that I really could do it.

"When I was in Columbus High School (in Ohio)", remembers Mark, "I spent a lot of time in the metal shop machining armature parts and aerial brace pieces. I also used to spend a lot of time in the art department painting and sculpting.

"I went to the Columbus College of Art and Design which is one of the better art schools in the midwest. Most of the techniques I learned there seemed to be taking me on a path to advertising or illustration. By the end of the third year I realized that if I was going to break into film I was going to have to break off and make

a film on my own. Since there wasn't anywhere to learn that in Columbus—I figured that I was going to have to do some experimenting on my own.

"I stopped going to Columbus College at the end of my third year and did some paperback book covers for Simon and Shuster during the summer of 1980. In between jobs, I worked on *Highrise*. I was living at home to save expenses. In January I started working at a billboard company painting billboards by day and worked on the film at night. I stayed up late and didn't get too much sleep."

Mark estimates that it would have taken him a full year to complete *Highrise* even if he could have worked full time on the project; as it was, it took two. "It was really a learning experience," says Mark, "There was a lot of trial and error involved."

MODEL CONSTRUCTIONS

Three models were built in various sizes to represent the alien flying machine. Mark explains that "The legs were articulated with aluminum armature wire. I could have spent more time and machined better joints but it didn't seem like a priority. I learned one important thing during this film and I've been re-learning it ever since: *establish priorities!* You can spend lots of time making the best ball-and-socket joint in the world and end up not making any movie!"

The basic forms of the ships were made out of "green foam" type styrofoam (used for insulation). After carving and filing with a "rasp" type file to create the desired shapes, spackling compound was smoothed over the forms and allowed to dry. These were sanded till smooth and painted with enamel hobby paints. Mark feels that the extreme light weight of the styrofoam facilitated the stop motion aerial brace work needed to create the illusions of movement and flight.

The craft's legs were of wood—chiseled and filed. Fine detailing consisted of shapes cut from smooth finish Bristol board and plastic model car parts. Many of the details were simply painted on. Mark found a Dremel tool, a small jig saw and a utility knife all useful tools in making these constructions.

To create a bird's eye view of the Earth city, Mark began by coating a 4'x4' sheet of plywood with spackling compound to fill in the grain texture of the wood. Most of the buildings were little wooden blocks cut to the desired shape in a miter box. On some of the blocks, Mark glued small pieces of illustration board onto which he had drawn windows. Some of the larger buildings were blocks of Styrofoam with illustration board sides. The realistic effect of this miniature is largely due to a very careful job of painting. The streets, for example, are nothing but paint. The people on the sidewalks are little painted shadows—all that was needed to convey human presence in such an extreme long shot. Tiny animated cars—painted squares of cardboard—are a typical added touch.

LIGHTNING BOLTS

Mark created many effects inside the camera that would normally be handled through a lab or optical house. To do this he would often run the same piece of film repeatedly through the camera. Sometimes up to 18 passes were necessary to satisfy Mark's desire for slick imagery.

Mark devised a system to hold 8"x10" sheets of clear acetate in front of the camera. This consisted of a wooden box with a standard animation peg bar attached. Mark rendered art work onto the acetate and photographed it either together with the primary background or separately on another run through the camera. The electrical bolts, lens flares and Alien Flying Craft lights of *Highrise* were created using this system.

The massive shafts of electricity seen at the beginning of *Highrise* were drawn animation—a series of renderings on acetate using white ink and photographed against black velvet. Each series of drawings was run through the camera three times: the first pass was out of focus to give the bolt a soft edge, the second was a little sharper and the third completely in focus. The first two passes were shot through gels to introduce some color into the outer areas. Mark knew exactly where to draw the bolts on the acetate so that they appeared connected to the spaceship and the skyscraper because he made careful notations on the acetate while looking through his camera at the time the background was photographed. Later, back in the studio, Mark transfered his notations—again looking through the camera—onto an 8"x10" sheet of paper; over this guide drawing the cel animation was drawn.

Realistic-looking lens flares were also created by means of cel art. Mark studied photographic magazines to see what real lens flares looked like. Then he painted the desired effect and exposed it on a sep-

Left: The alien craft about to land on the skyscraper and pluck it out of the ground to transport it to another planet to drop on the unfortunate low plains drifter. The ship is made of "green foam" type Styrofoam, carved to shape and covered with spackling, painted and detailed with model kit parts. The building is a four-foot high miniature and the background is one of Mark's brilliantly executed paintings. The lightness of the Styrofoam construction facilitated the aerial-brace animation necessary to shoot the scene. The ship's legs are made of wood, chiseled and filed to shape. The movement of the legs was articulated with aluminum armature wire. Says Mark: "The most important thing I learned while making *Highrise* is *establish priorities!* You can make the best ball-and-socket joint in the whole world and end up not making any movie!"

PHOTOS: MARK SULLIVAN

As the insect-like alien craft lands on top of the skyscraper, its legs dig into the structure's top and weirdly violent bolts of white electricity come shooting down the building's side towards the sidewalk below.

build both miniatures about the same size (4 feet in their longest dimensions). He made the building and spaceship look small in relation to the cityscape by means of a superimposition.

"First I animated the camera tracking past the miniature building," explains Mark, "The building was against a black background. I had my 20-foot track calibrated for each frame. After shooting this, I hung a white drape behind the miniature building and went back to each frame position and drew a tracing around the outline of the building onto an animation cel." The cells were held in register by the homemade cel holder described earlier. "I spent a lot of time inking the cels to produce black mattes and shooting a 'pencil test' to make sure they weren't quivering or flickering too much. Then, I set up the camera to photograph the track back from the miniature cityscape." Then, onto the same piece of film already used to record the movement of the building/ship, Mark photographed the city; each frame of that trackback was exposed through one of the series of holdout mattes thereby allowing all of the miniature city to be recorded on film except only that area where the building had previously been recorded. The black mattes prevented a double exposure over the building. Without the mattes, the effect would have been a ghost building — transparent.

STOP-MOTION BLURRING

Objects animated by stop-motion technique are normally unnaturally hard-edged and sharp since the objects are ordinarily stationary during frame exposures. To introduce some natural blurring to the movements of the alien craft Mark explains: "I tapped the aerial braced model and let it swing during the exposure. That was enough to create blurs." Mark exposed each frame for about five seconds (usually at f/22). He found that he did not have to allow for any reciprocity effect in spite of the long exposures, but simply followed the settings of his vivitar 45 CDS light meter. There was no special equipment—no animation motor, no intervalometer—used to insure consistent frame exposure. Using a 3-foot cable release and a stop watch, Mark made the exposures manually. It turned out that a small variation in exposure of ¼ or ½ second simply did not amount to a perceptible difference in the context of a five second exposure. This technique did get a bit tricky as only one hand was available to manipulate the model.

There is an unusual shot in *Highrise* in which the flying machine speeds over the desert planet as the camera follows the action seeming to speed right to left. The illusion of fast movement is enhanced by the blurring of the foreground rocks, cacti and dunes. To get this effect, Mark animated the set; the camera never really moved. Mark elaborates, "To get the

arate pass through the camera to enhance the desired shot. He gradually increased the exposure on the painting to correspond to any increase in light intensity in the shot. In one shot the lens flare is animated; it gets bigger and follows the axis of the light source. A series of paintings was created to animate this effect.

Sometimes Mark could not see the results of his efforts for months—since he had to complete shooting a 100 foot roll of film before having it processed. "I would do simpler set-ups at the beginning of the roll," he remembers, "And then do a complicated one at the end." This way Mark could reshoot immediately if

necessary since the complex shot would still be set up. Still, he says, "Most of the production time was spent tearing down shots and putting them back up again later for retakes."

When Mark had to devise a way to create a bird's eye view of the alien machine — skyscraper in tow—rising towards the camera with the Earth city visible in the distance, he chose to use a technique uncommon outside the facilities of major studios—a traveling matte. Since Mark couldn't get the image he needed without making either an enormous cityscape or a very small yet convincingly detailed alien ship and skyscraper, he chose to

impression of perspective, I animated the foreground moving past the camera *faster* than the more distant levels which were moved in finer gradations. The far distance was a painted backdrop and was not moved at all. The foreground element was moved during the frame exposure to create blurring. I had to do the shot about 5 times—I kept screwing up—but I ended up using the first take. There *are* some gliches in the animation but I wanted to get this film finished!"

A SINGLE SHOT

There is a shot near the end of *Highrise* that typifies the technical complexity of the film. In it the insect-like machine leaves the desert planet (presumably off to collect another tall building to drop on the unfortunate man). The craft rises into the frame and a brilliant light glows in the rear boosters. It shoots forward with incredible speed leaving long streaks of fading light behind. It slows in the far distance and there are light changes on the remote mountains it passes by. It ascends and is gone, passing through a cloud bank that has been left touched by rocket light. Sixteen passes through the camera were necessary to create this shot.

To record the action of the ship speeding off—apparently miles into the distance—required a switch from model to cel animation. "I really wanted to make it look it was disappearing into infinity," says Mark. He had a piece of glass positioned between the camera and the ship. First, Mark animated the model ship as far into the distance as his aereal brace would allow. Then, he looked through the camera and outlined the position of the ship onto acetate. Mark then took this drawing and, using a mechanical device called a "Lucy," created 20 outlines of the ship of decreasing size, the last being hardly larger than a dot. Mark then painted color and detail onto each of the outlines guided by a color Polaroid photo of the ship.

To photograph the 20 cutouts, Mark attached them to animation cels that were attached to the glass in front of the camera. With each succeeding frame exposure he replaced one cutout ship with a smaller one. The effect on film is of the ship taking off like a bullet traveling miles in a second. Mark adds, "To help hide the substitution of the cutouts for the real ship, I rubbed Vaseline in selected areas on *another* sheet of glass—one still closer to the camera. It looked like a blur—a big 'swish'—that really helped out."

Fifteen subsequent passes enhanced this image by creating various effects with cel art. One pass put in lens flare seemingly caused by the rocket's brilliant light. Another pass created the "energy trail" or streak of fading light left by the departing ship. Four passes created the light from the rear engines: one pass each for red, orange, bright yellow, and white lights.
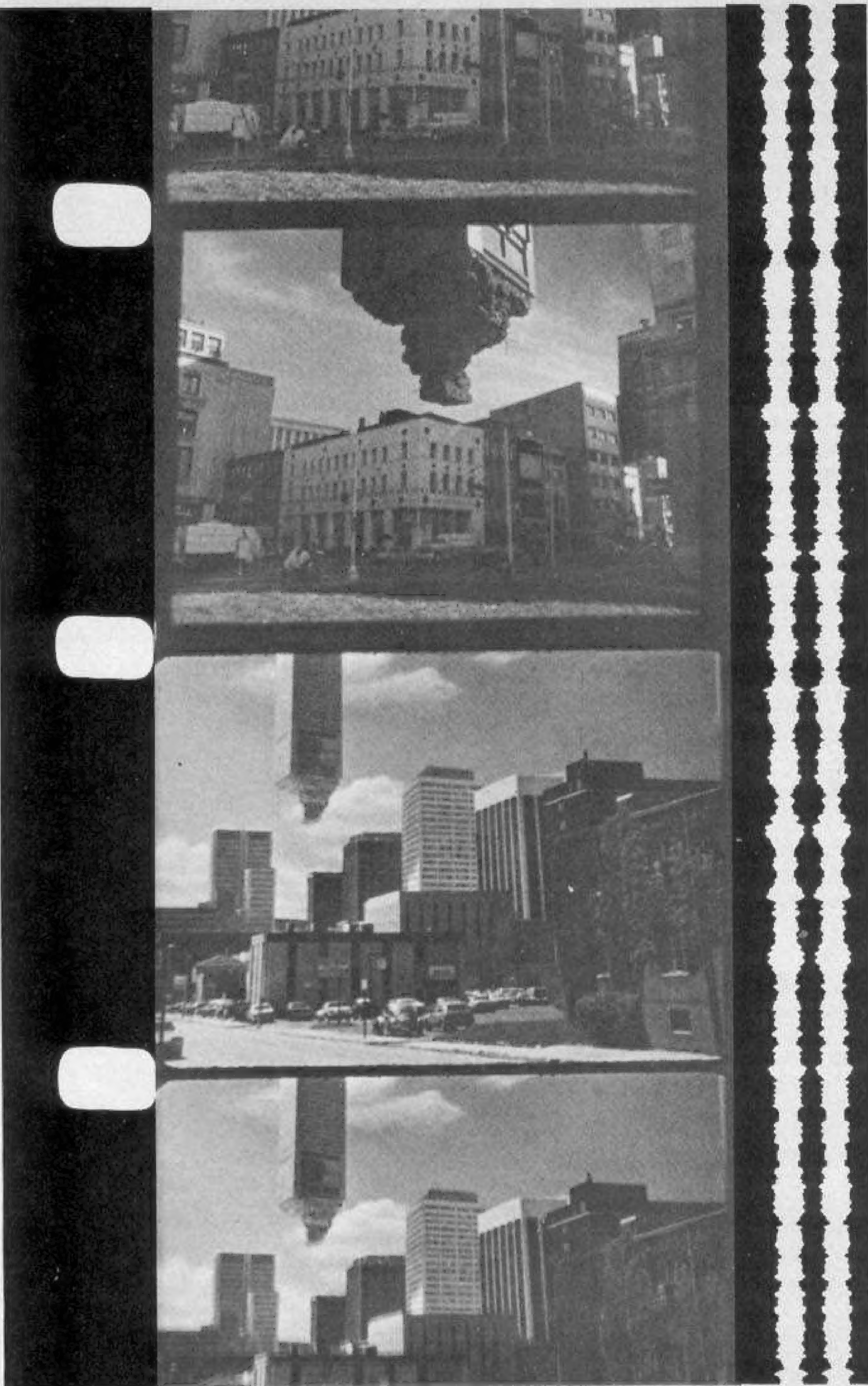
The skyscraper is uprooted in an incredible long shot that suspends disbelief. Real people and traffic move in the foreground to reveal the immensity of the building as it rises skyward, as rubble drops from its base.

Three passes were used to photograph swirling paint in an attempt to visualize an "energy force" as the ship leaves, but this is barely evident in the footage. Five passes were needed to simulate light changes on the mountains and clouds as the ship passes by. One pass recorded a short blast of an air compresser in flour to create a blast of dust kicked up by the ship's ascent from the desert.

THE BIG MOVE

It took 2 years, $3,000.00, and 30 paintings to do it, but in May 1982 *Highrise* was completed. Mark decided to move to California, encouraged by his friend Ted Rae

(*Jaws II* animator) who was already working out there. "I had to set a deadline for myself to move out," Mark remembers, "I do that when I'm working too—I *have* to or inertia sets in!"

When he got to California, Mark found that it was necessary to have his film transfered to both Beta and VHS video tapes because many places do not have 16mm projecters. Mark got some good reactions to his film and encouragement, but no job offers. Matte painter Dave Stipes refered Mark to renowned stop-motion animator Jim Danforth. At the time, Danforth was looking for help doing the matte work on the tv series *Bring 'em*
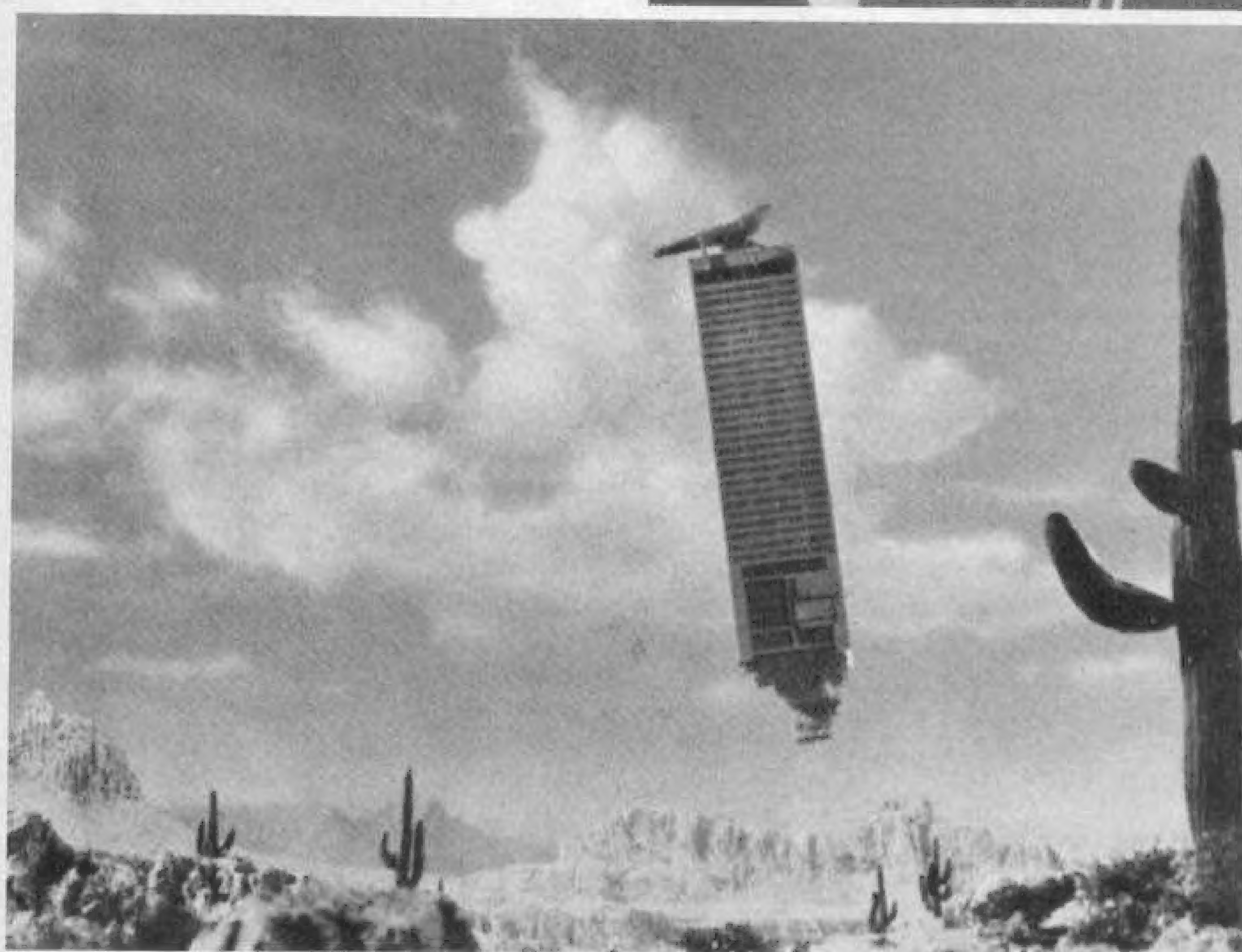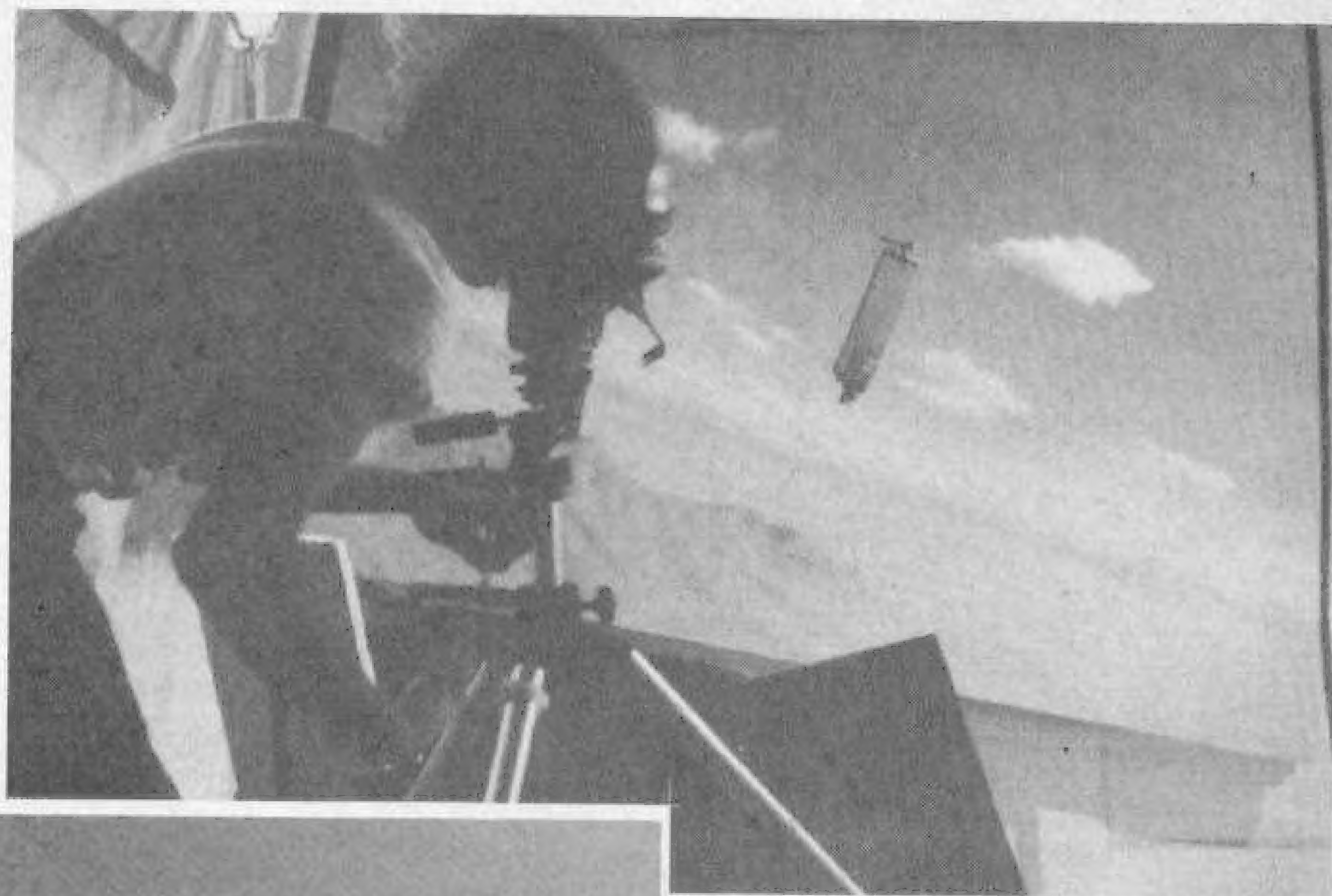
PHOTOS: MARK SULLIVAN
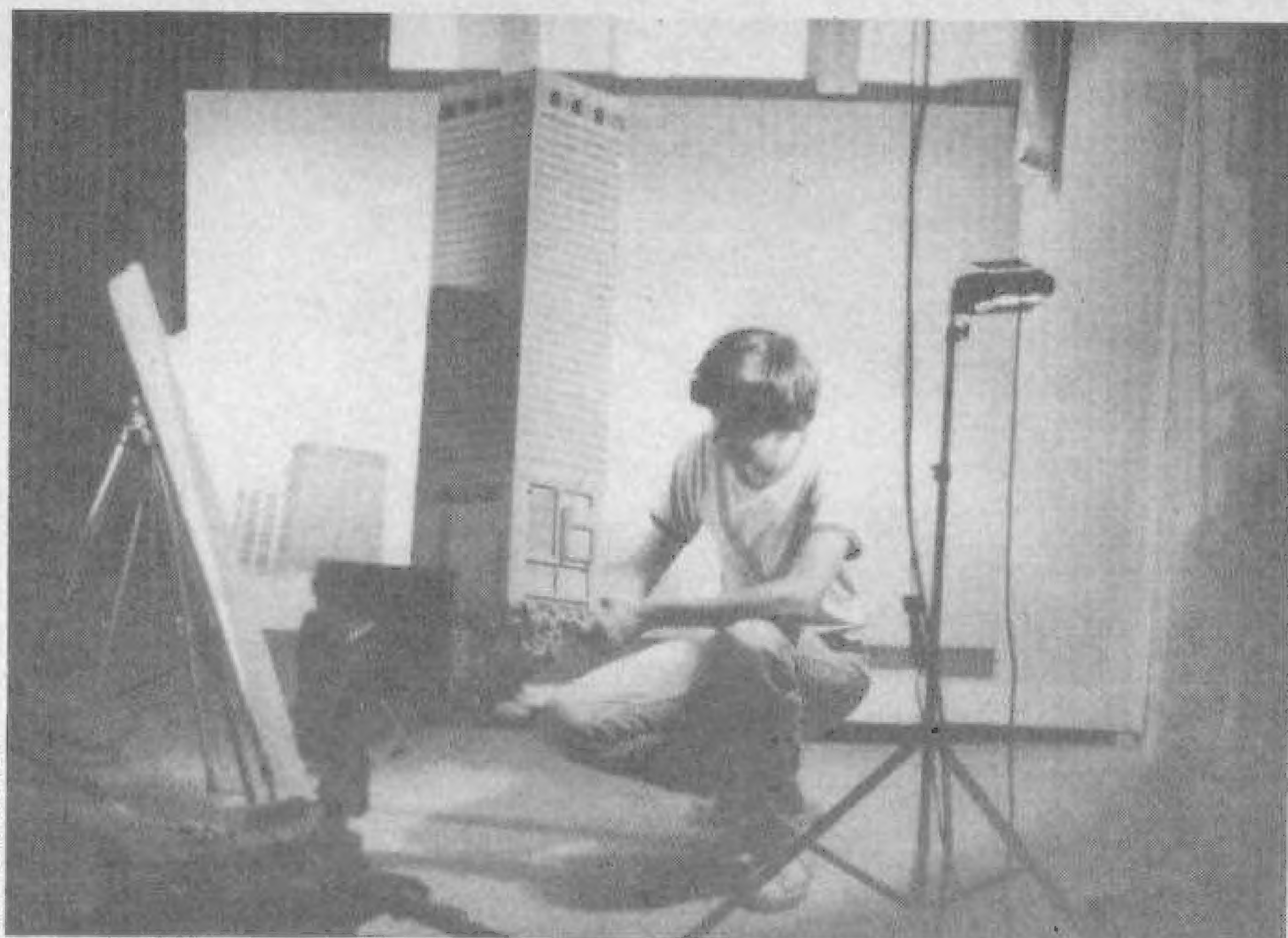
Above: Miniature cityscape built for aerial and ground P.O.V. shots. **Above right:** Mark Sullivan positions the model skyscraper rigged on an aerial brace. **Right:** The alien craft "flies" the stolen skyscraper up, up and away. **Below:** Skyscraper comes in for a landing on a desert landscape, built from a background painting and a foreground miniature.

Back Alive. With Highrise under his arm, Mark went to see the famed creator of special visual effects. He got the job. Mark worked with Jim Danforth for the next 12 months, and most recently has been painting mattes for the tv cable station Showtime for the series Fairy Tale Theatre.

"A lot of people have ideas," Mark reaffirms, "But for some reason they just can't make their film. I just wanted to make this movie!"

Mark Sullivan has left his basement in Columbus far behind. It hasn't been easy getting a start in the highly competitive world of California filmmaking. It takes a high power combination of drive, talent and commitment . . . and a little luck along the way. The luck consists of being in the right place at the right time, but hanging around Hollywood will get you nowhere unless you have something to show—a good film and the will to succeed.   CM

Left: Assisting Jim Danforth, Mark Sullivan helped create this matte shot for TV's *Bring 'em Back Alive.*
Below: A multiplane miniature landscape set-up for *Highrise.* Each level of the miniature landscape was animated at a different speed to give the effect of the camera zooming along the terrain, following the alien craft with the building in tow. This gave the shot a very realistic perspective with the foreground going by faster than the background. The extreme foreground was moved slightly during each exposure to create a realistic blurring effect. The far background level of the miniature landscape and the background painting were stationary. The glass has an airbrushed atmospheric haze effect. **Bottom left:** Ted Rae (right) assists Mark with a background blend for the "low plains drifter" shots. Tom Sullivan—the "low plains drifter"—is sitting (center) and Mark has his back to the camera . **Bottom right:** A detail of one of the paintings created for *Highrise.*